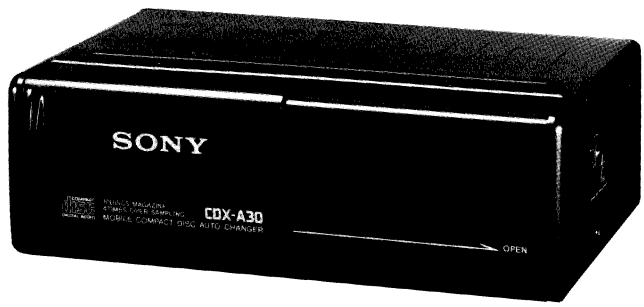
CDX-A30

SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model



SPECIFICATIONS

System
Compact disc digital audio system
Laser diode properties
Material: GaAlAs
Wavelength: 780 nm
Emission duration: Continuous
Laser output power: Less than 44.6 μW*
* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.
D-A conversion
16-bit linear
Frequency response
5 – 20,000 Hz ± 1 dB
Signal-to-noise ratio
90 dB
Wow and flutter
Below measurable limit
Outputs
Line output (for changer connector only)

General
Current drain
800 mA (CD playback)
800 mA (during disc loading or eject)
Operating temperature
– 10°C – 55°C (14°F – 131°F)
Mounting dimensions
Approx. 301 × 98 × 200 mm (w/h/d)
(11 7/8 × 3 7/8 × 7 7/8 in.)
not incl. projecting parts and controls
Weight
Approx. 3 kg (6 lb 10 oz)
Supplied accessories
Disc magazine (1)
Mounting hardware (1 set)
Extension cord (1)
Optional accessory
Compact disc single adaptor CSA-8

Design and specifications subject to change without notice.

FEATURES

- **Mobile CD auto changer** automatically changes the discs in the disc magazine and enables you to play the desired selections of the 10 discs.
- **Compact and space-saving** for either vertical or horizontal installation in the car.
- The connected equipment enables you to operate the changer in the car.
- High quality sound obtained with the 4 fs digital filter.

MICROFILM

MC-Service

COMPACT DISC PLAYER

SONY

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 44.6 μW*
     * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optiocal Pick-up Block (including APC borad).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

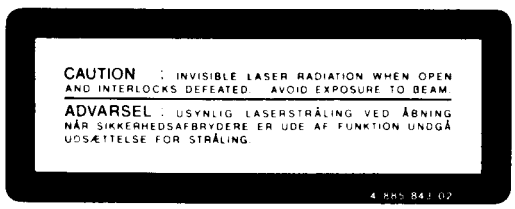
1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstråling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*
     * Målt i 1,6 mm afstand fra overfladen af objektivlinsen pa den optiske pick-up enhed.
   - Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laserdioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

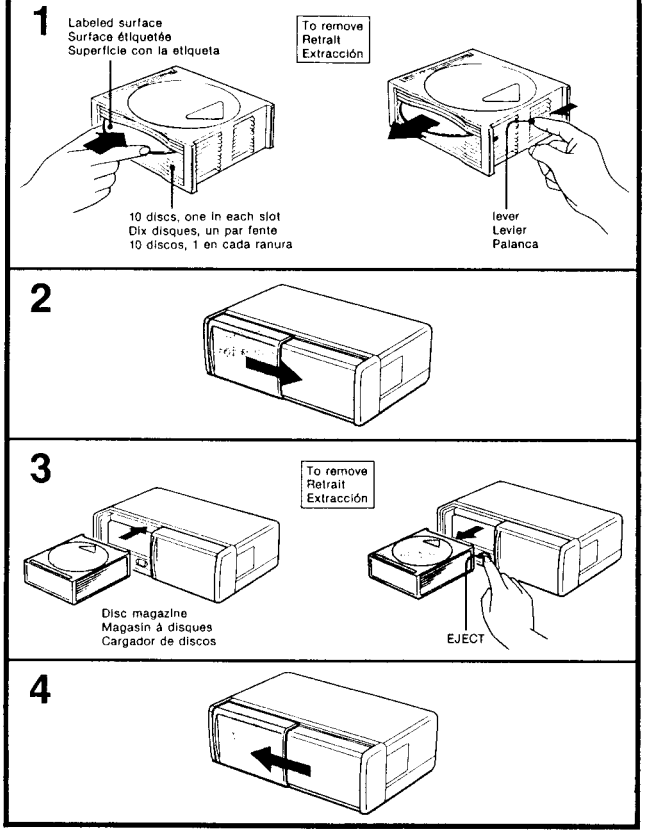
1. Advarsel Mærkning


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersateilyä.

SECTION 2
GENERAL

PREPARATIONS
PREPARATIFS
PREPARATIVOS

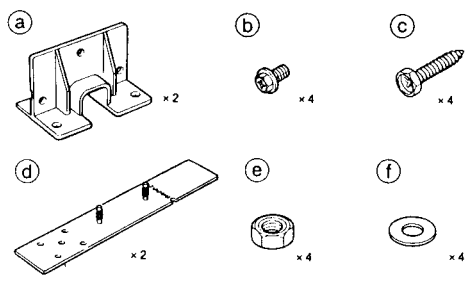


Use the unit with the door closed
Otherwise, foreign matter may enter the unit, and contaminate the lens in the player.
Note
To play a 3-inch CD, use the Sony CSA-8 adaptor (optional). Playing a 3-inch CD without the adaptor may damage the unit.

Utiliser cet appareil avec la porte fermée
Si cela n'est pas fait, des matières étrangères peuvent entrer dans l'appareil et contaminer l'objectif du lecteur.
Remarque
Pour la lecture de disque compact de 3 pouces, utiliser l'adaptateur Sony CSA-8 (en option). Sans lui, l'appareil risque d'être endommagé.

Emplee la unidad con la puerta cerrada
De lo contrario, podrían introducirse materias extrañas y contaminar el objetivo del reproductor.
Nota
Para reproducir un disc compacto de 8 cm., utilice el adaptador CSA-8 Sony (opcional). La reproducción de un disco compacto de 8 cm. sin el adaptador puede dañar la unidad.

SUPPLIED MOUNTING HARDWARE
MATERIEL DE MONTAGE FOURNI
FERRETERÍA DE MONTAJE SUMINISTRADA



INSTALLATION
INSTALLATION
INSTALACIÓN

PRECAUTIONS

- Choose the mounting location carefully, observing the following:
  —The fuel tank should not be damaged by the tapping screws.
  —There should be no wire harnesses nor pipelines under the place where you are going to install the unit.
  —The spare tire, tools or other equipment in or under the trunk should not be interfered with nor damaged by the screws or the unit itself.
- Be sure to use only the supplied mounting hardware for a safe and secure installation.

PRECAUTIONS

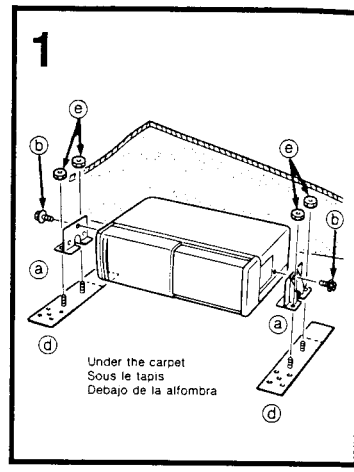
- Choisir soigneusement l'endroit de montage en observant ce qui suit.
  —Le réservoir d'essence ne doit pas être endommagé par les vis taraudeuses.
  —Il ne doit pas y avoir de faisceau de fils ou de tuyaux sous l'endroit où l'on désire installer l'appareil.
  —La roue de secours, les outils ou autre équipement dans ou sous le coffre ne doivent pas être gênés ni endommagés par les vis ou l'appareil lui-même.
- S'assurer d'utiliser uniquement le matériel de montage fourni pour une installation correcte et sûre.

PRECAUCIONES

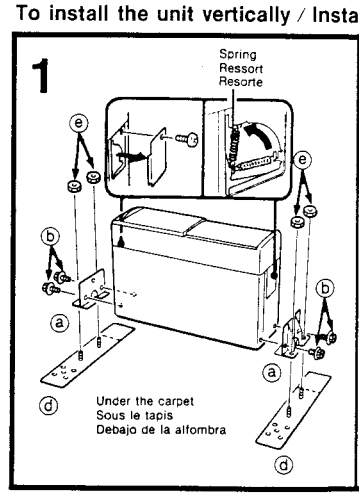
- Elija cuidadosamente el lugar de montaje, teniendo en cuenta lo siguiente:
  —El depósito de combustible no deberá dañarse con los tornillos roscachapa.
  —No deberá haber mazos de conductores ni tubos debajo del lugar donde vaya a instalar la unidad.
  —La rueda de repuesto, las herramientas, u otros equipos situados dentro o debajo del portaequipajes no deberán verse interferidos ni dañados por los tornillos ni por la propia unidad.
- Para realizar una instalación segura, emplee solamente la ferretería de montaje suministrada.

HOW TO INSTALL THE UNIT / INSTALLATION DE L'A

To install the unit horizontally / Installat



To install the unit vertically / Installation



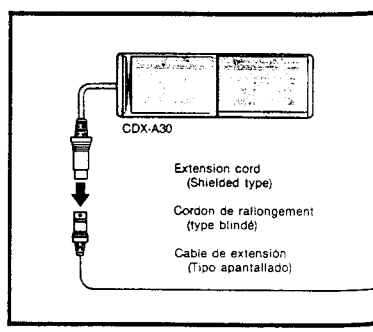
Be sure to reposition the spring as shown in the
Ne manquer pas de remettre le ressort comme ill
Asegúrese de reponer el resorte como muestra la

CONNECTIONS
CONNEXIONS
CONEXIONES

Caution
Before making connections, disconnect the ground wire terminal of the car battery to avoid short circuits.

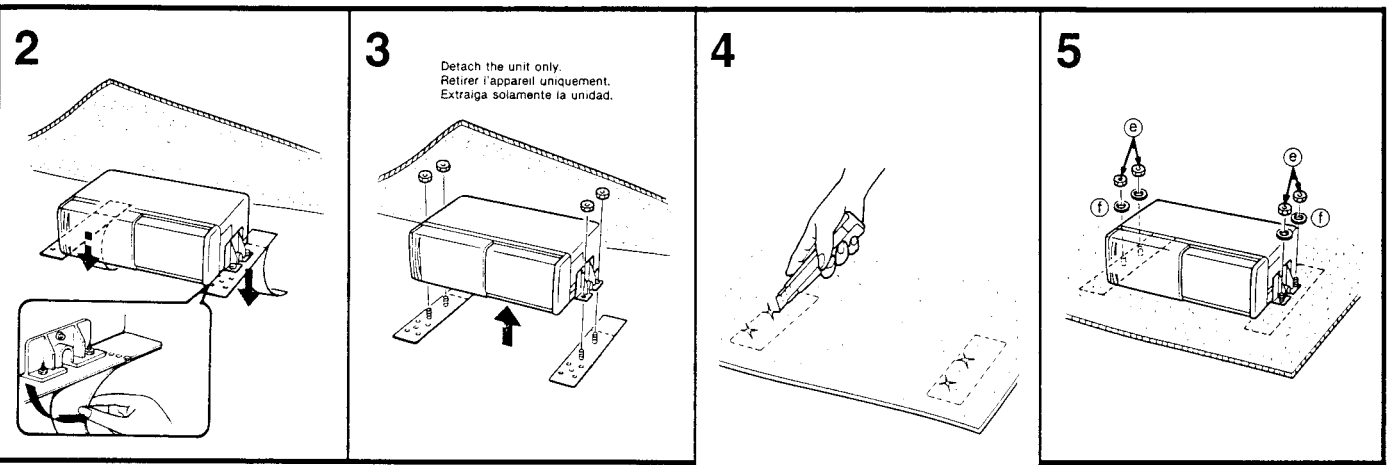
Attention
Avant d'effectuer les connexions, déconnecter le fil de masse de la batterie de voiture pour éviter un court-circuit.

Precaución
Antes de realizar las conexiones, desconecte el terminal del conductor de puesta a carroceria de la bateria del automóvil para evitar cortocircuitos.

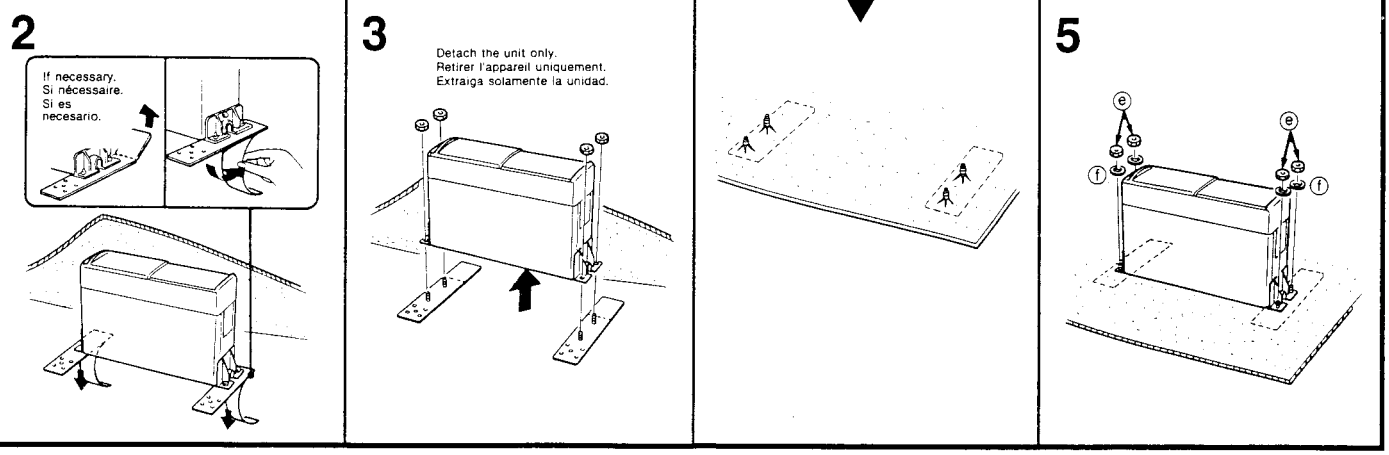


I DE L'APPAREIL/INSTALACIÓN DE LA UNIDAD

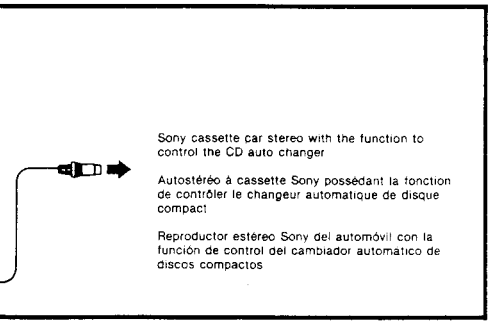
stallation de l'appareil à l'horizontale / Instalación horizontal de la unidad



llation de l'appareil à la verticale / Instalación vertical de la unidad



in the illustration below.
mme illustré ci-dessous.
estra la siguiente ilustración.



Sony cassette car stereo with the function to control the CD auto changer

Autostéréo à cassette Sony possédant la fonction de contrôler le changeur automatique de disque compact

Reproductor estéreo Sony del automóvil con la función de control del cambiador automatico de discos compactos

Note
Be sure to use the **supplied** extension cord. Using a cord other than supplied one may cause noise.

For details, refer to the installation/connection manual of each product.

Remarque
Sassurer d'utiliser le cordon de rallongement **fourni**. D'autre cordons risqueraient de causer du bruit.

Pour plus de détails, se reporter au mode d'emploi pour l'installation/connexion de chaque produit.

Nata
Asegúrese de utilizar el cable de extensión **suministrado**. Si usa otro cable que no sea el suministrado, puede producirse ruido.

Con respecto a los detalles, consulte el manual de instalación/conexión de cada producto.

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SECTION 3
MECHANICAL ADJUSTMENTS

[LARGE ELEVATOR GEAR POSITION (LOCATION 10.5) ADJUSTMENT]

1. Move the middle elevator gear in the arrowed direction and place the top plate at the position where there are no clearances between the bottom face of the top plate and the top edges of the three claws.

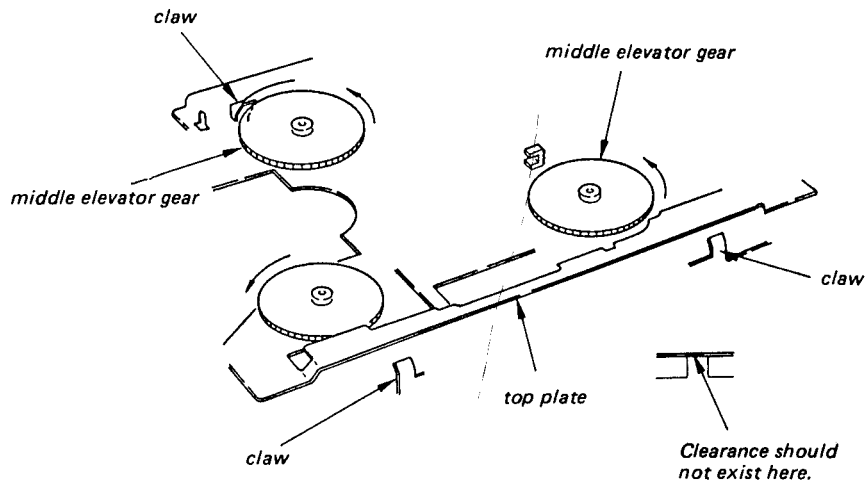
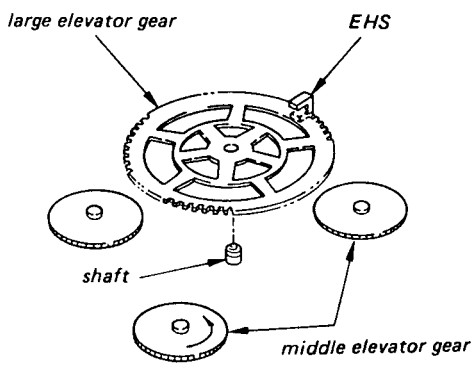
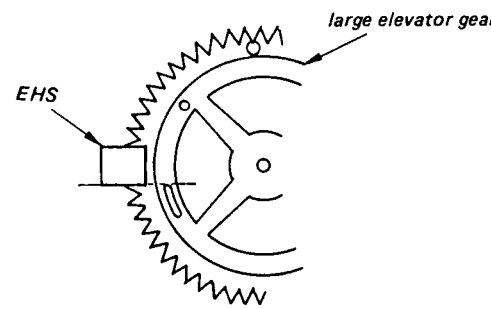


Fig. 1

2. Put the large elevator gear on the shaft of the top plate taking care not to move the middle elevator gears. The large elevator gear should be fastened by the top plate and EHS protrusion and should position in the relationship with the EHS as shown in Fig. 1.
3. After the placing, fix the large elevator gear with a retaining ring.





Edge of EHS protrusion and edge of protrusion on the large elevator gear should be aligned as shown.

Fig. 2

[HOMING ADJUSTMENT]

Note: 1. The mechanism section should be completely assembled.

2. Control the mechanism with the main unit XR-7300.

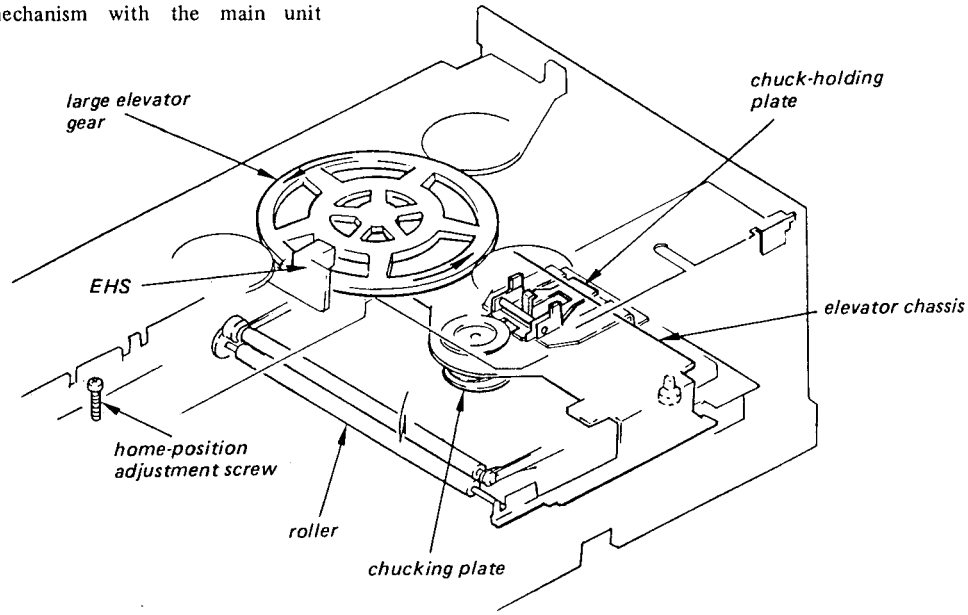


Fig. 3

1. Put the disk magazine containing several disks in the changer.
2. Initialize the changer.
3. Pull off the first disk.
4. Wait until the elevator lowers down to the home position.
5. Move the large elevator gear so that the clearance between the inner edge face of the chucking plate and edge of the top face of the stainless chuck-holding plate becomes in 1.5 mm (1/16 inches) as shown in Fig. 4.
6. Make a dot marking on the large elevator gear as shown in Fig. 5.
7. Re-put the first disk in the disk magazine.
8. Pull off the first disk again. The dot marking made in the step 6 above should position as shown in Fig. 5.
9. Fine adjust the position of the large elevator gear with the home-position adjustment screw shown in Fig. 3.

Adjustment Screw Position	Large Elevator Gear Position Displacement
One (1) turn in clockwise	15 (fifteen) degrees clockwise
One (1) turn in counterclockwise	15 (fifteen) degrees counterclockwise

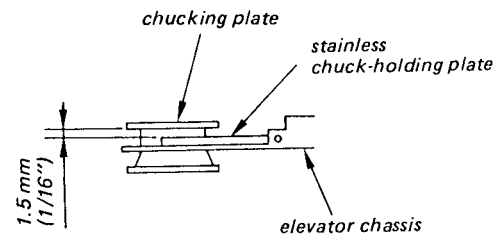
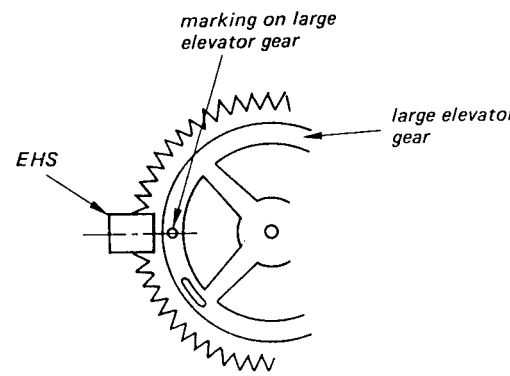


Fig. 4



Note:
Make a marking near and on the center line of the EHS sensor.

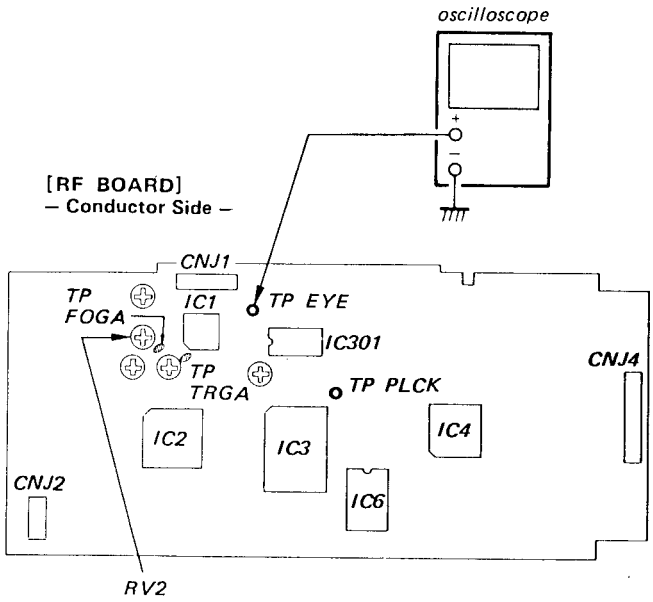
Fig. 5

SECTION 4
ELECTRICAL ADJUSTMENTS

1. Perform adjustments as given.
2. Be sure to use the disc "YEDS-18" parts code: 3-702-101-01, but only when indicated.
3. Unsolder the small shield plate from the RF board.
4. Power supply voltage: DC 14.4 V (more than 2A).

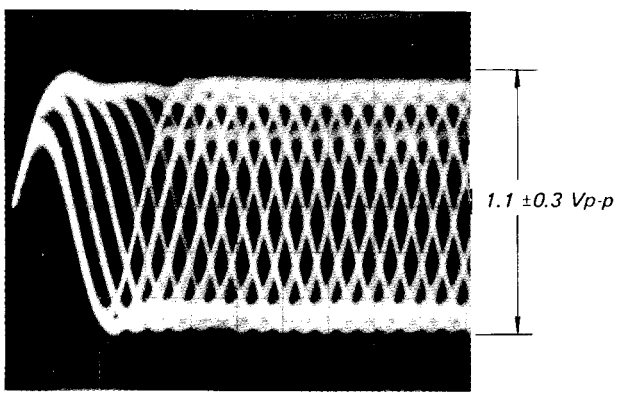
1. Focus Offset Adjustment

Procedure:



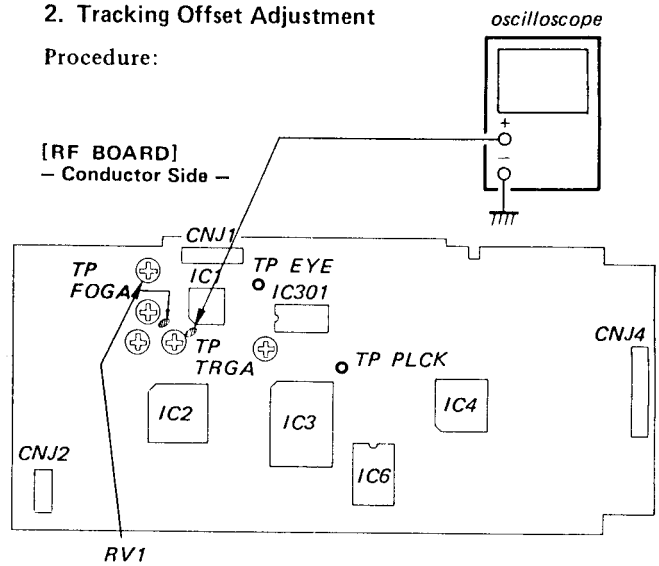
1. Connect the oscilloscope to RF board test point [EYE].
2. Put the set into play mode by loading the disc.
3. Adjust main board RV2 so that the oscilloscope waveform eye pattern is good.
   A good eye pattern means that the diamond shape (◇) in the center of the oscilloscope can be clearly distinguished.

Volt/Div: 200 mV
Time/Div: 0.5 µSec



2. Tracking Offset Adjustment

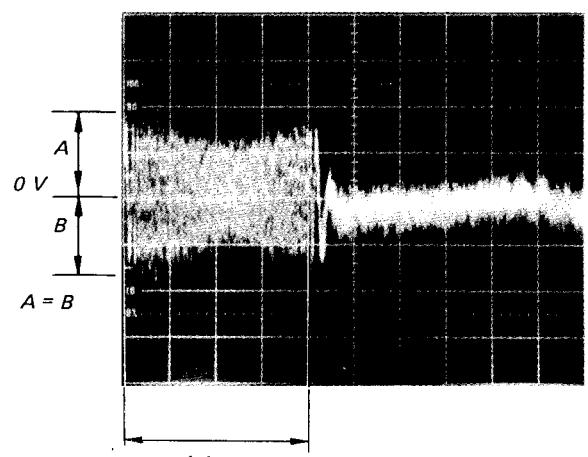
Procedure:



1. Connect the oscilloscope to RF board test point [TRGA], pin (1) of IC1.
2. Put the set into play mode by loading the disc.
3. Press the |◀◀ or ▶▶| (or ◀◀ , ▶▶) button, then check the traverse waveform*.
4. Adjust RV1 (main board) so that oscilloscope reading is symmetrical in relation to 0 V.

*Traverse waveform: This is the tracking error waveform appears when crossing the track.

Volt/Div: 0.5 V
Time Div: 2 mSec
Center 0 V



traverse wafeform
(100 track jump waveform)

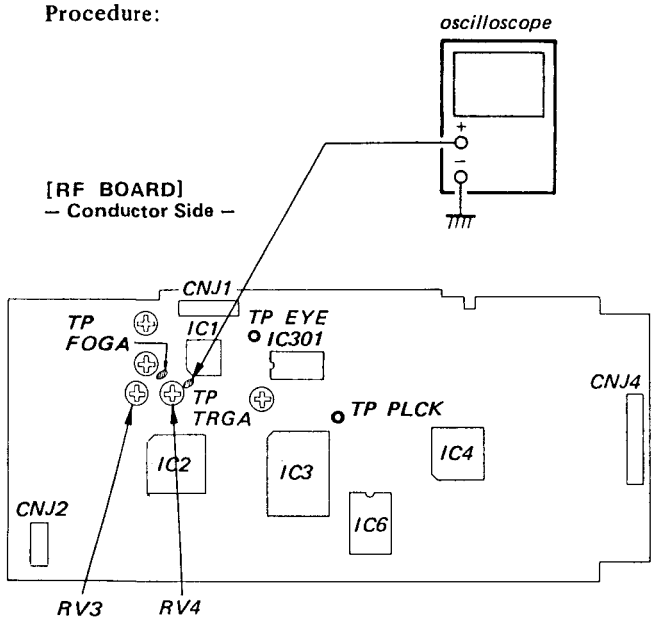
3. Tracking Gain Adjustment (coarse adjustment)

This adjustment is to be performed when replacing the following parts.

- Optical Pick-up Block
- RV4

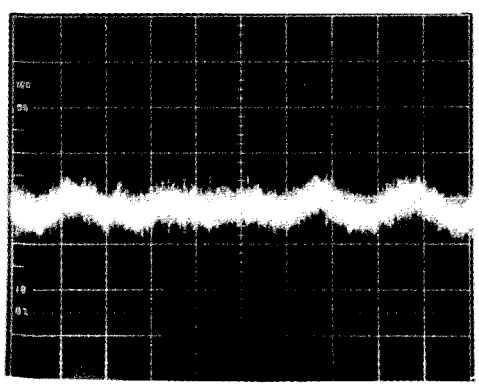
This adjustment should be performed after focus offset and tracking offset adjustments are completed.

Procedure:



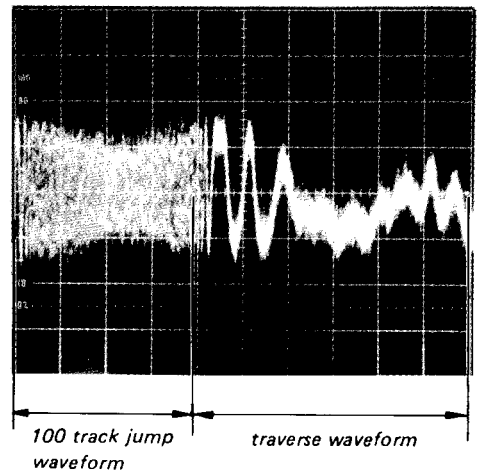
1. Connect the oscilloscope to RF board test point TRGA.
2. Put the set into play mode by loading the disc.
3. Turn RF board RV4 from clockwise stop, then check the oscilloscope waveform.
   Fix RV4 at the position where the waveform disappears.

Volt/Div: 0.5 V
Time/Div: 2 mSec

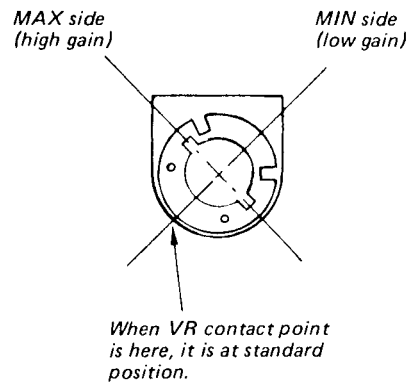


waveform when the wave appears

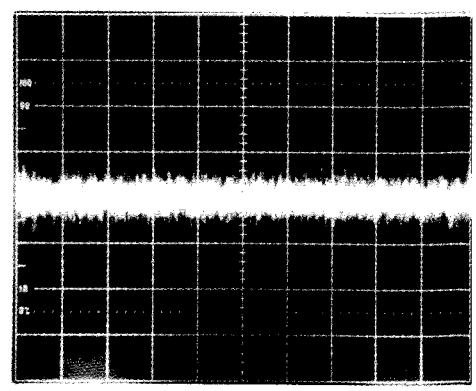
- **When gain is lowered . . .**
  When selecting by pressing |◀◀ or ▶▶| button, brake application is poor because of low tracking gain. Therefore, the traverse waveform appears after the 100 track jump waveform, then the selection will be located slowly.



- **When gain is highered . . .**
  Operation noise is heard due to a scratch or dust, then operation will be instability.



RV3 standard position



waveform when the wave disappeared

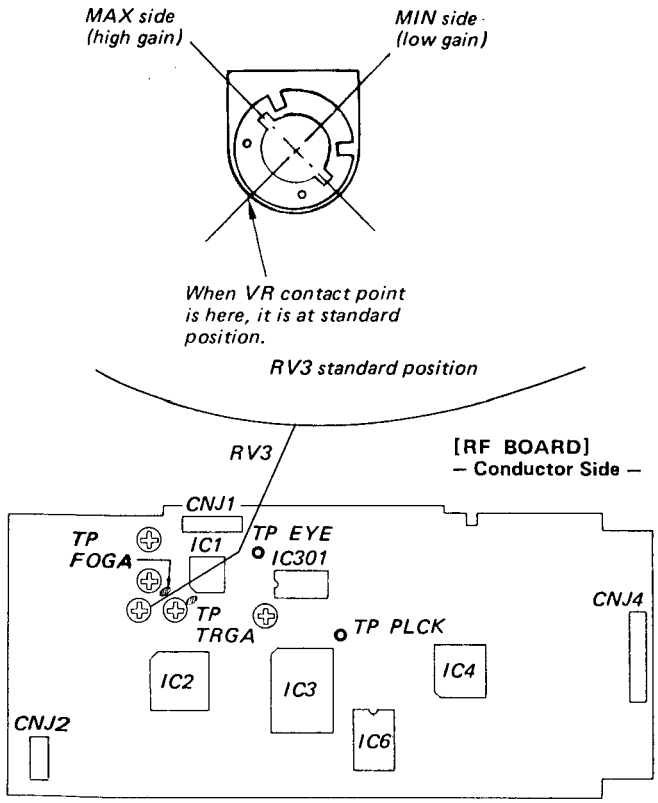
4. Focus Gain Adjustment (coarse adjustment)

This adjustment is to be performed when replacing the following parts.

- Optical Pick-up Block
- RV3

Procedure:

1. Set RV3 (RF board) to the standard position.
2. Check that there is not an abnormal amount of operation noise (white noise) from the 2-axis devise. If there is, turn RV3 slightly clockwise.

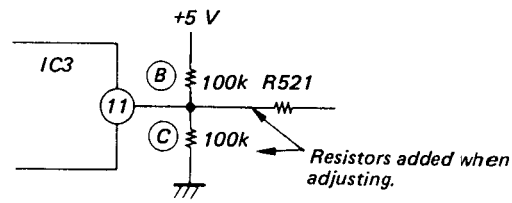


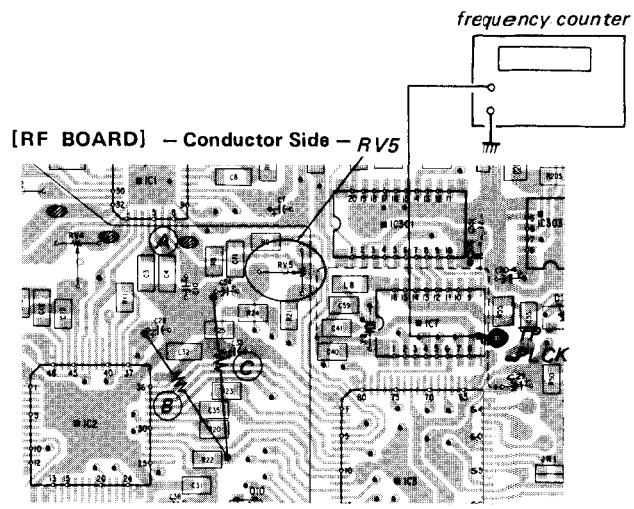
- **When gain is highered . . .**
  The set does not play because of no focus operation.
- **When gain is highered . . .**
  Operation noise is heard due to a scratch or a dust, then operation will be unstable.

5. PLL Freerun Frequency Adjustment

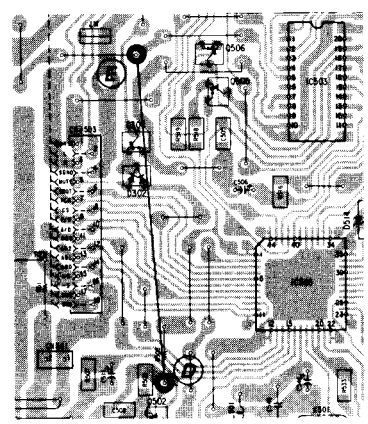
Procedure:

1. Unsolder the solder bridge at Ⓐ.
   (IC3 pin ⑤ is opened)
2. Connect 100 kΩ resistors to Ⓑ, Ⓒ.
   (This is to set the IC3 pin ⑪ voltage to 2.5 V)
3. Install a test jumper wire between Ⓓ and Ⓔ on the jack board to pull up the P/C terminal of the DC-DC converter ⊖.
4. Connect the frequency counter to RF board test point PLCK (IC3 pin ⑦⓪).
5. Turn the power switch on (Do not use the disc), then adjust RV5 so that the frequency is 4.3218 MHz ±10 kHz.
6. After adjusting, reset 1, 2 and 3 as original.





[JACK BOARD] – Conductor Side –



SECTION 5
DIAGRAMS

5-1. RF PRINTED WIRING BOARD

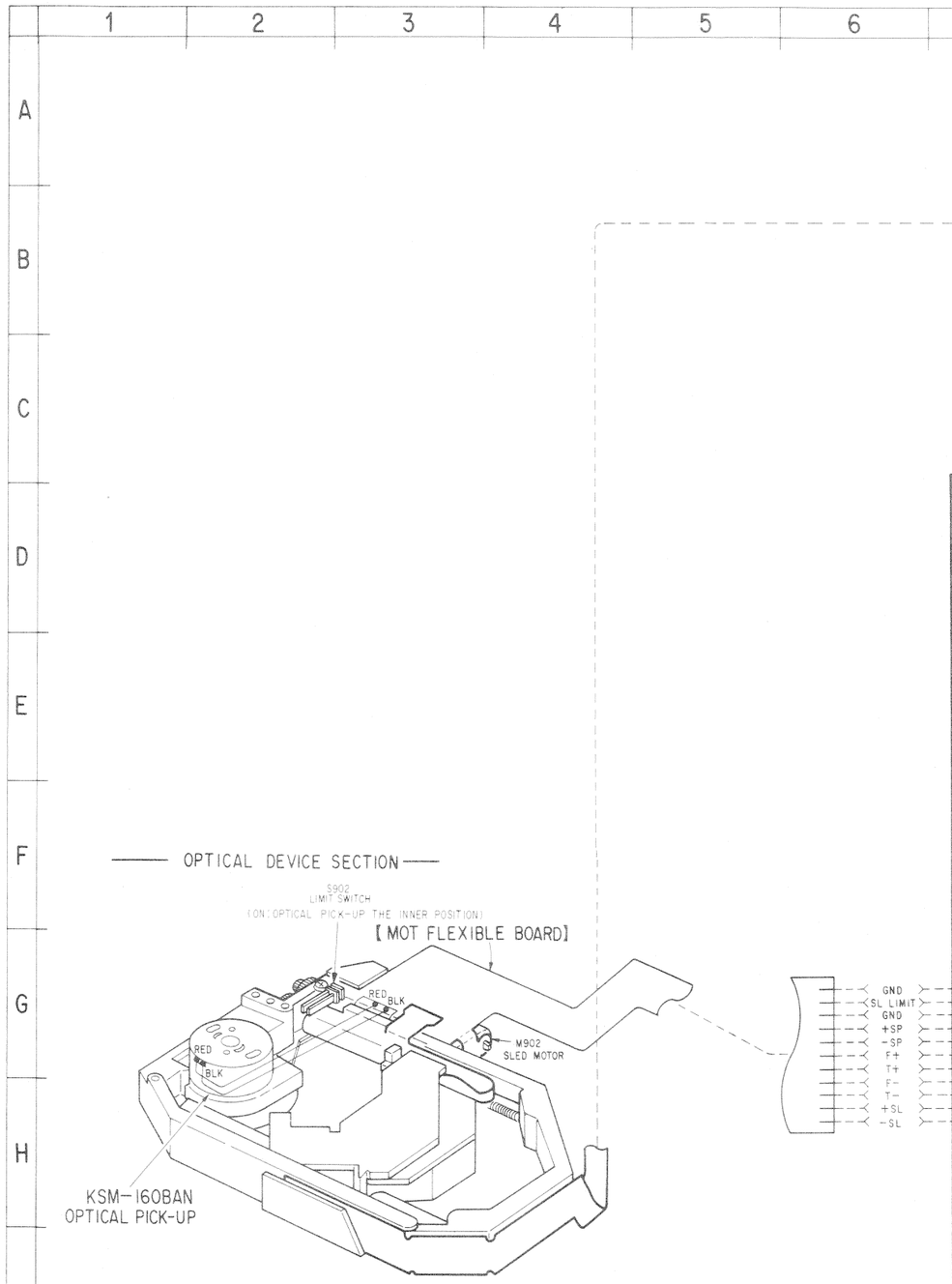
- See pages 21 to 23 for Schematic Diagram.
- See page 26 for Semiconductor Lead Layouts.

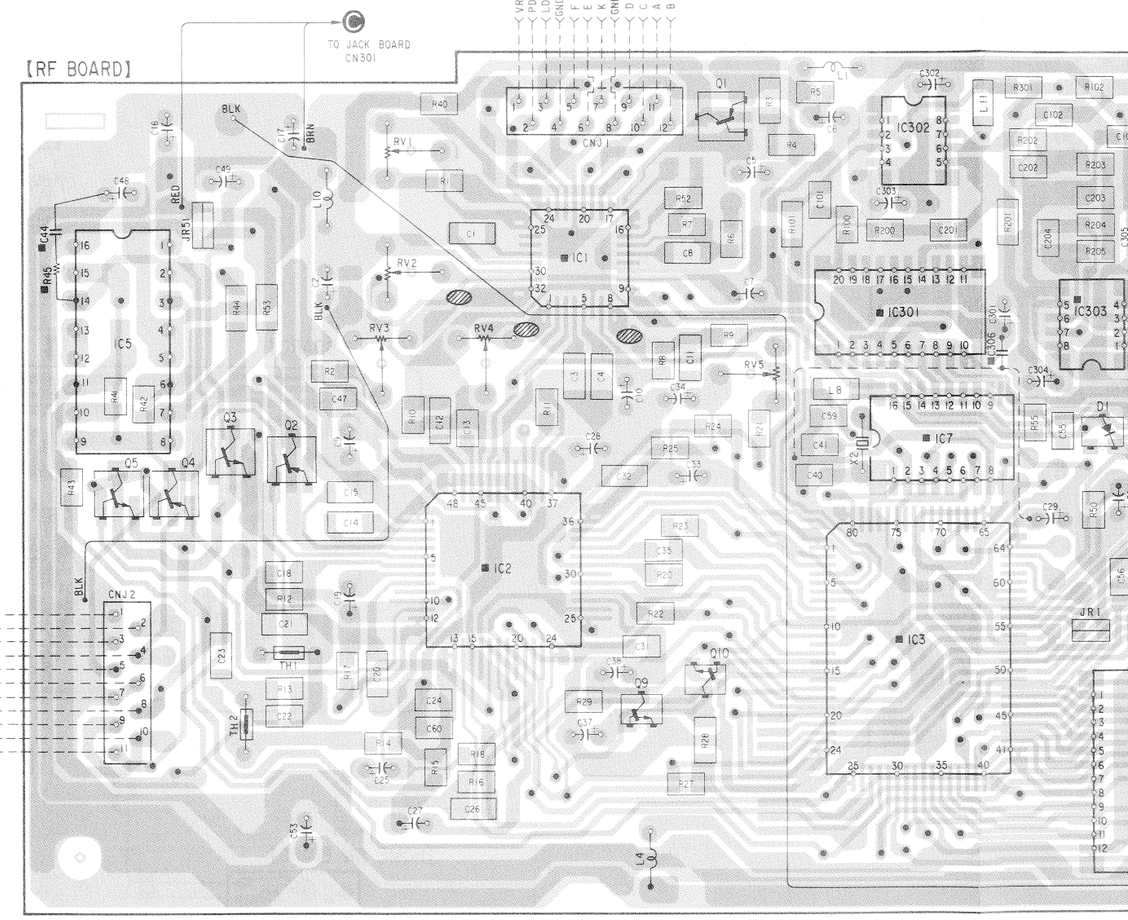
Note:

- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen.
- ▒▒ : Pattern of the rear side.

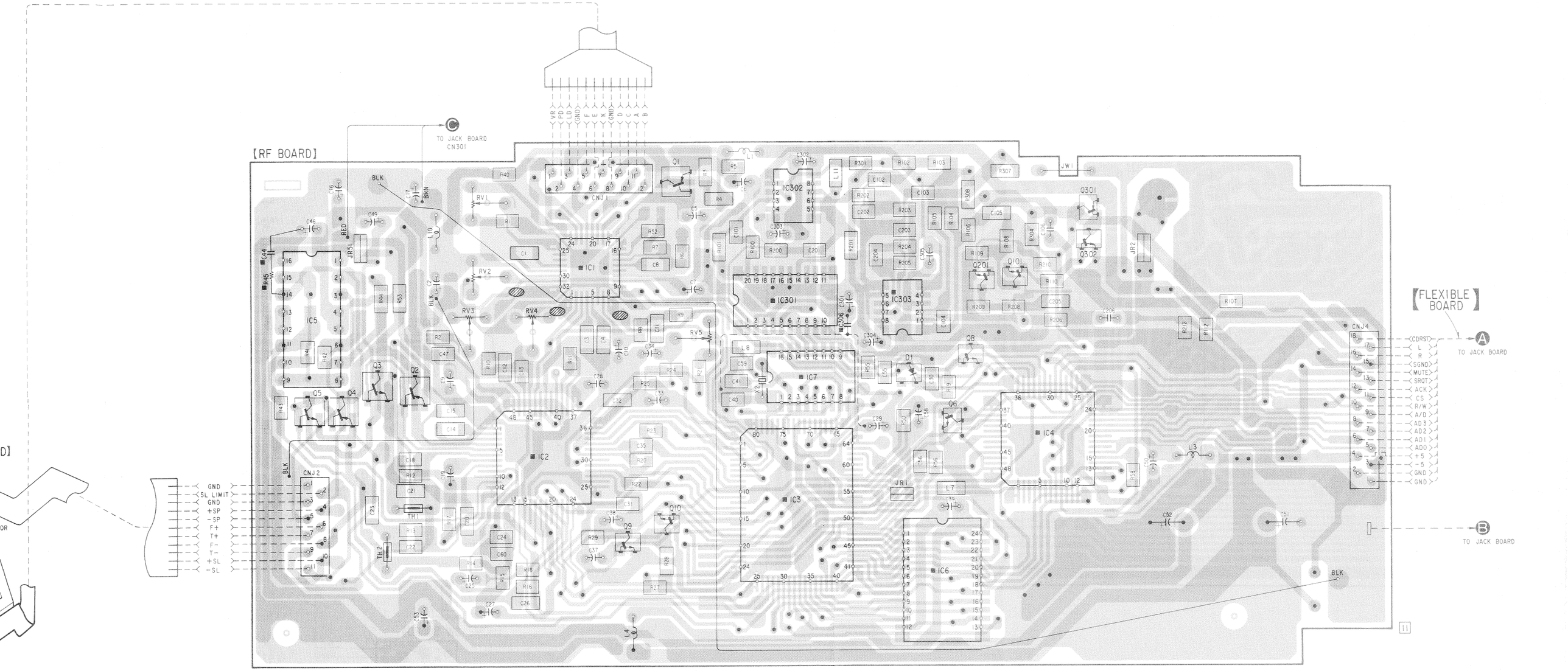
● Semiconductor Location

Ref. No.	Location
D1	F-14
IC1	E-10
IC2	G-10
IC3	G-12
IC4	F-15
IC5	E-7
IC6	H-14
IC7	F-13
IC301	E-12
IC302	D-12
IC303	E-14
Q1	D-11
Q2	F-8
Q3	F-8
Q4	F-8
Q5	F-7
Q6	F-14
Q8	E-14
Q9	H-11
Q10	G-11
Q101	E-15
Q201	E-15
Q301	D-16
Q302	D-16





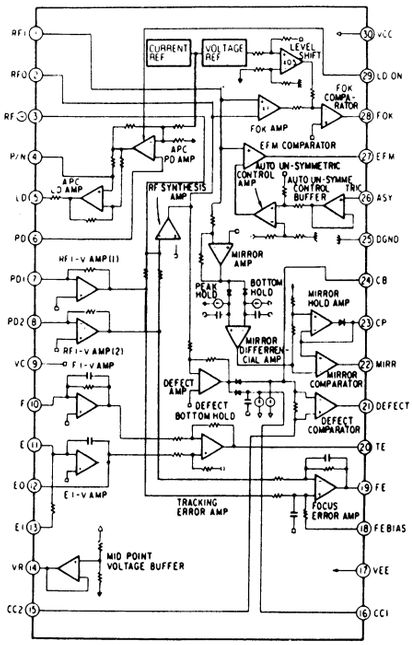
MC-Service


[RF BOARD]
TO JACK BOARD CN301
VR
PD
LD
GND
F
E
K
GND
D
C
A
B
CNJ1
Q1
IC302
IC301
IC303
IC1
IC5
IC7
IC2
IC3
IC4
IC6
Q301
Q302
Q201
Q101
Q8
Q6
Q3
Q2
Q5
Q4
Q9
Q10
D1
JW1
JR1
JR2
JR3
JR4
JR5
JR6
JR7
JR8
L1
L3
L4
L7
L8
L10
L11
X2
TH1
TH2
BLK
RED
BRN
CNJ2
GND
SL LIMIT
GND
+SP
-SP
F+
T+
F-
T-
+SL
-SL
[FLEXIBLE BOARD]
CNJ4
CDRST
L
R
SGND
MUTE
SRQT
ACK
CS
R/W
A/D
AD3
AD2
AD1
AD0
+5
-5
GND
GND
TO JACK BOARD
TO JACK BOARD

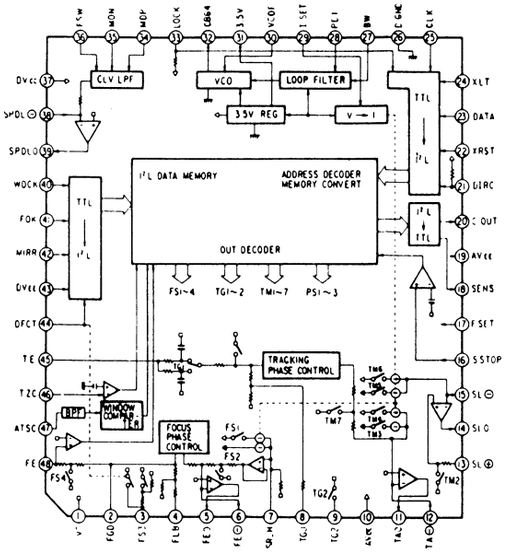
MC-Service

5-2. IC BLOCK DIAGRAMS

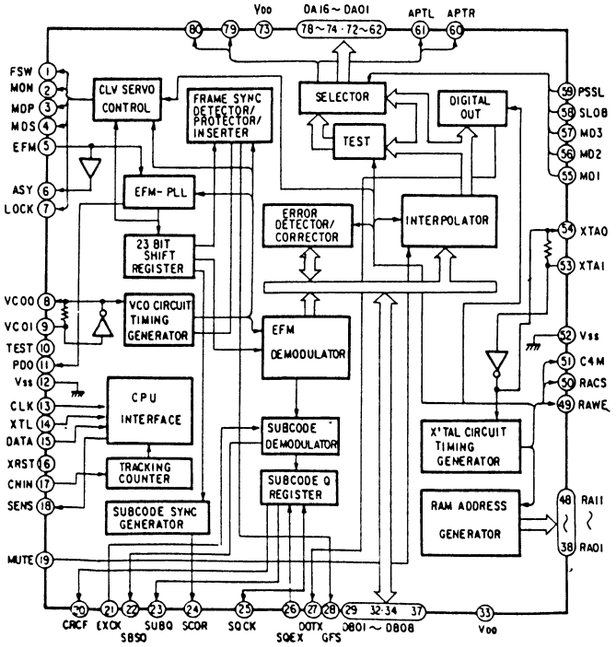
IC1 CXA-1081Q



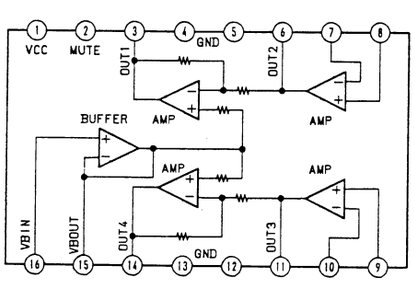
IC2 CXA1082Q



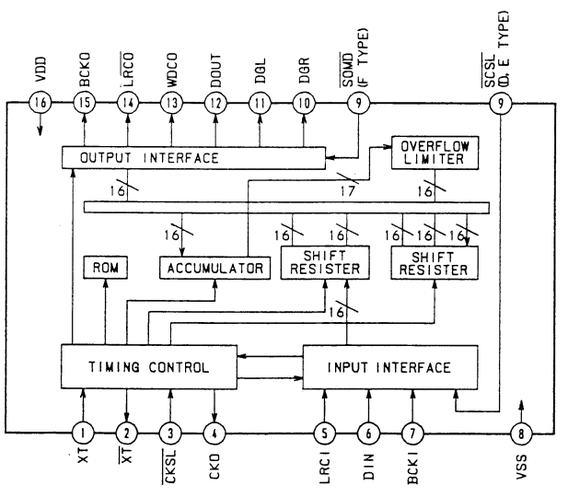
IC3 CXD1125Q



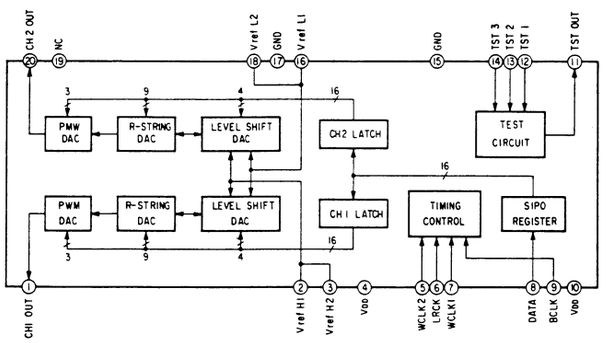
IC5 LA6530



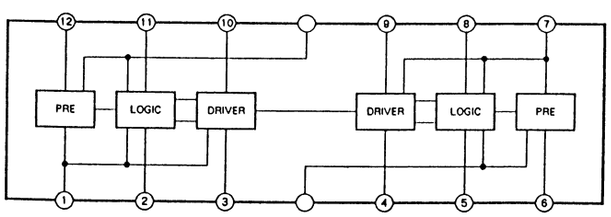
IC7 CXD1316DM



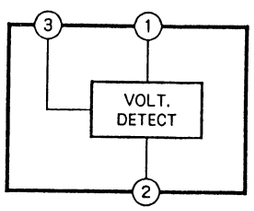
IC301 CXD1161M-2



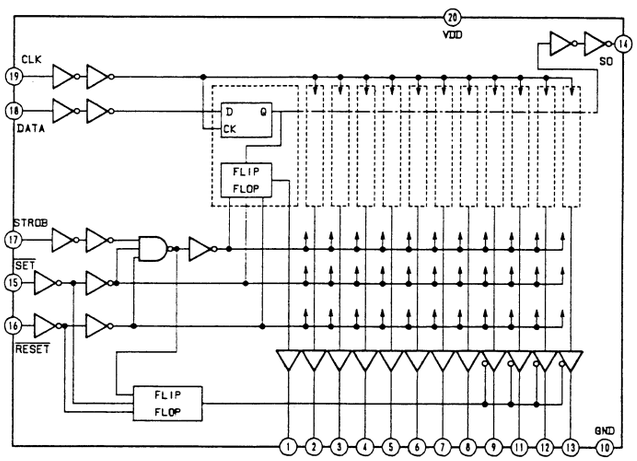
IC501, 507 LB1649



IC502 S-8054HN-CB



IC503 CX-7991



5-3. OTHER PRINTED WIRING BOARDS

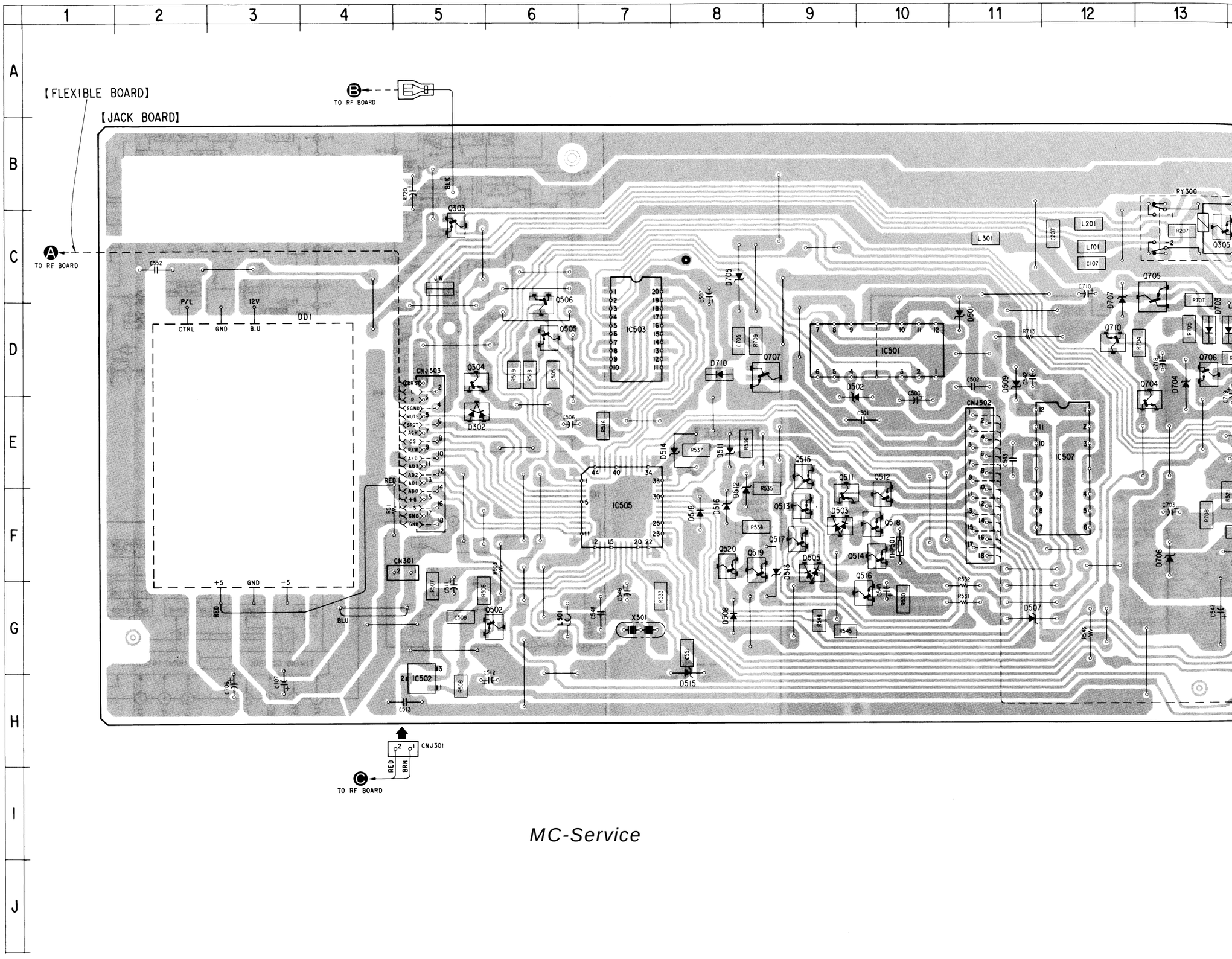
- **See pages 11 to 13 for RF Printed Wiring Board.**
- **See page 26 for Semiconductor Lead Layouts.**

Note:

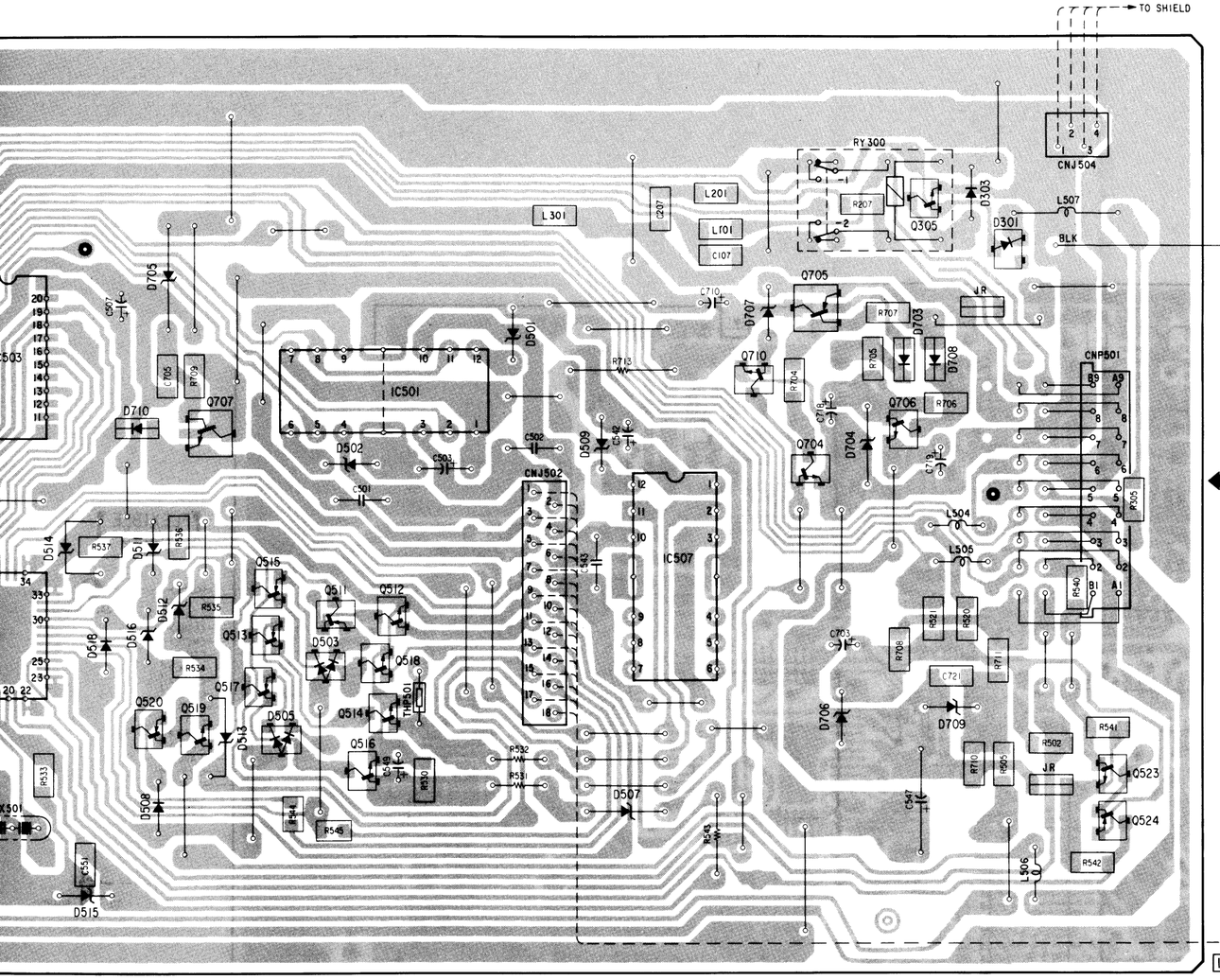
- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.

• Semiconductor Location

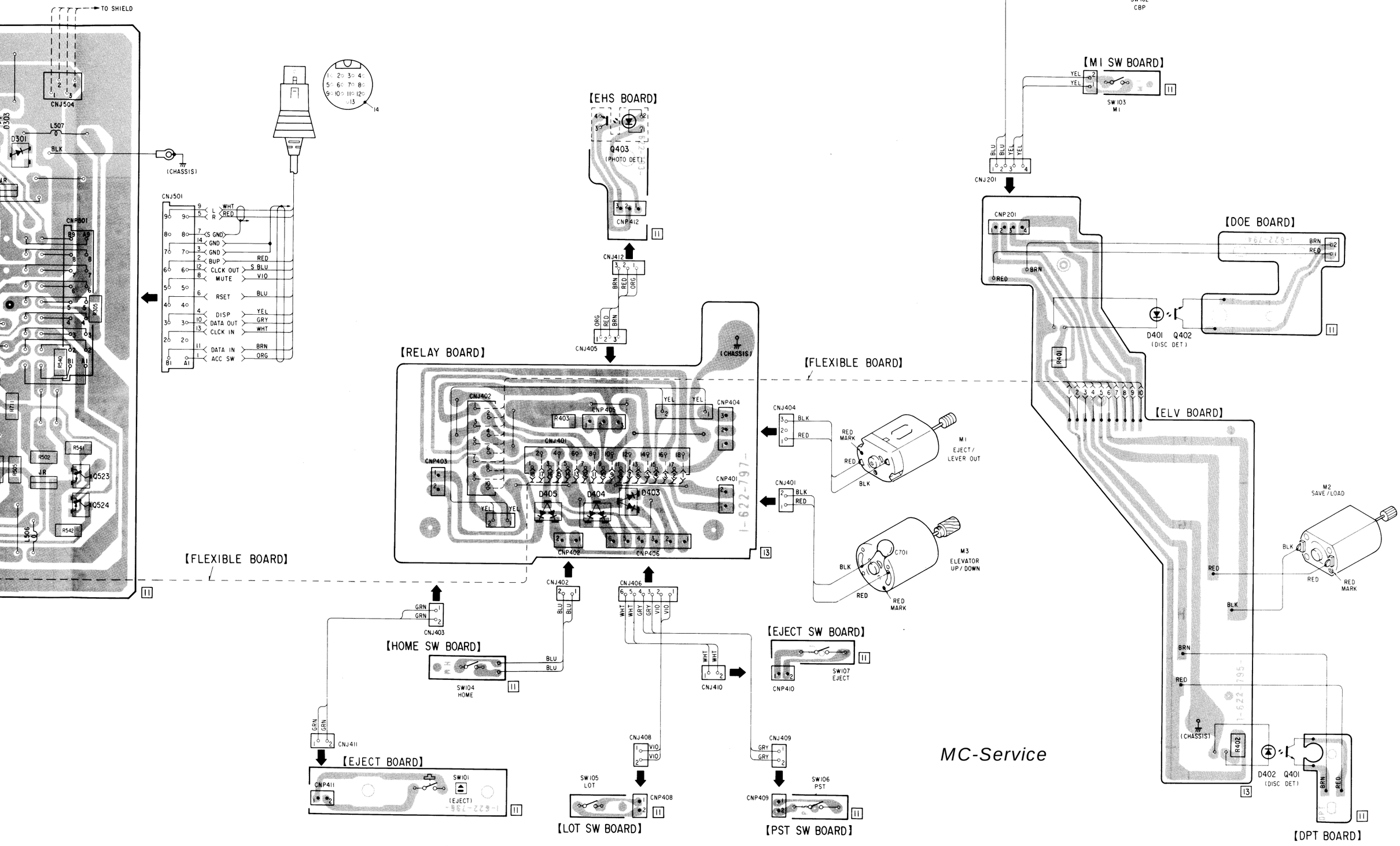
Ref. No.	Location	Ref. No.	Location
D301	C-14	Q303	C-5
D302	E-5	Q304	D-5
D303	C-14	Q305	C-13
D401	E-27	Q401	J-28
D402	J-28	Q402	E-27
D403	G-21	Q403	C-21
D404	G-21	Q502	G-6
D405	G-20	Q505	D-6
D501	D-11	Q506	D-6
D502	E-10	Q511	F-9
D503	F-9	Q512	F-10
D505	F-9	Q513	F-9
D507	G-11	Q514	F-10
D508	G-8	Q515	E-9
D509	D-11	Q516	G-10
D511	F-8	Q517	F-9
D512	F-8	Q518	F-10
D513	F-9	Q519	F-8
D514	E-8	Q520	F-8
D515	H-8	Q523	G-15
D516	F-8	Q524	G-15
D518	F-8	Q704	E-13
D703	D-13	Q705	C-13
D704	D-13	Q706	D-13
D705	C-8	Q707	D-9
D706	F-13	Q710	D-12
D707	D-12		
D708	D-14		
D709	F-14		
D710	D-8		
IC501	D-10		
IC502	H-5		
IC503	D-7		
IC505	F-7		
IC507	E-12		



MC-Service


TO SHIELD
CNJ504
RY300
R207
Q305
D303
D301
L507
BLK
L201
L301
L701
C107
C207
C710
Q705
D705
D707
Q710
R707
R704
R705
D703
D708
Q706
R706
D704
Q704
C702
C703
CNP501
B9 A9
R505
L504
L505
R540
B1 A1
IC501
IC507
D501
R713
D509
C502
C503
C501
CNJ502
D710
Q707
C705
R709
D502
D514
R537
D511
R536
Q515
Q511
Q512
R535
Q513
D503
Q518
D516
R534
Q517
Q520
Q519
D505
Q514
TH501
Q516
R533
R534
R545
D508
D515
R532
R531
D507
R548
C547
R710
R505
R502
JR
R541
Q523
Q524
R542
L506
R521
R520
R711
C721
R708
C703
D706
D709
JR
(CHASSIS)
CNJ501
WHT
RED
L
R
(S GND)
GND
GND
BUP
CLCK OUT
MUTE
RSET
DISP
DATA OUT
CLCK IN
DATA IN
ACC SW
BRN
ORG
YEL
GRY
WHT
VIO
BLU
RED
S BLU
【FLEXIBLE BOARD】
11
【EHS BOARD】
Q403
(PHOTO DET)
CNP412
CNJ412
BRN
RED
ORG
CNJ405
【RELAY BOARD】
(CHASSIS)
CNJ402
CNP405
R403
CNJ401
CNP403
D405
D404
D403
CNP402
CNP406
CNP401
YEL
CNP404
CNJ404
BLK
RED
RED MARK
I-622-797-
13
【FLEXIBLE BOARD】
CNJ402
CNJ406
GRN
CNJ403
【HOME SW BOARD】
SW104
HOME
CNJ411
【EJECT BOARD】
CNP411
SW101
(EJECT)
CNJ410
【EJECT SW BOARD】
SW107
EJECT
CNP410
CNJ408
CNP408
SW105
LOT
【LOT SW BOARD】
CNJ409
GRY
SW106
PST
CNP409
【PST SW BOARD】

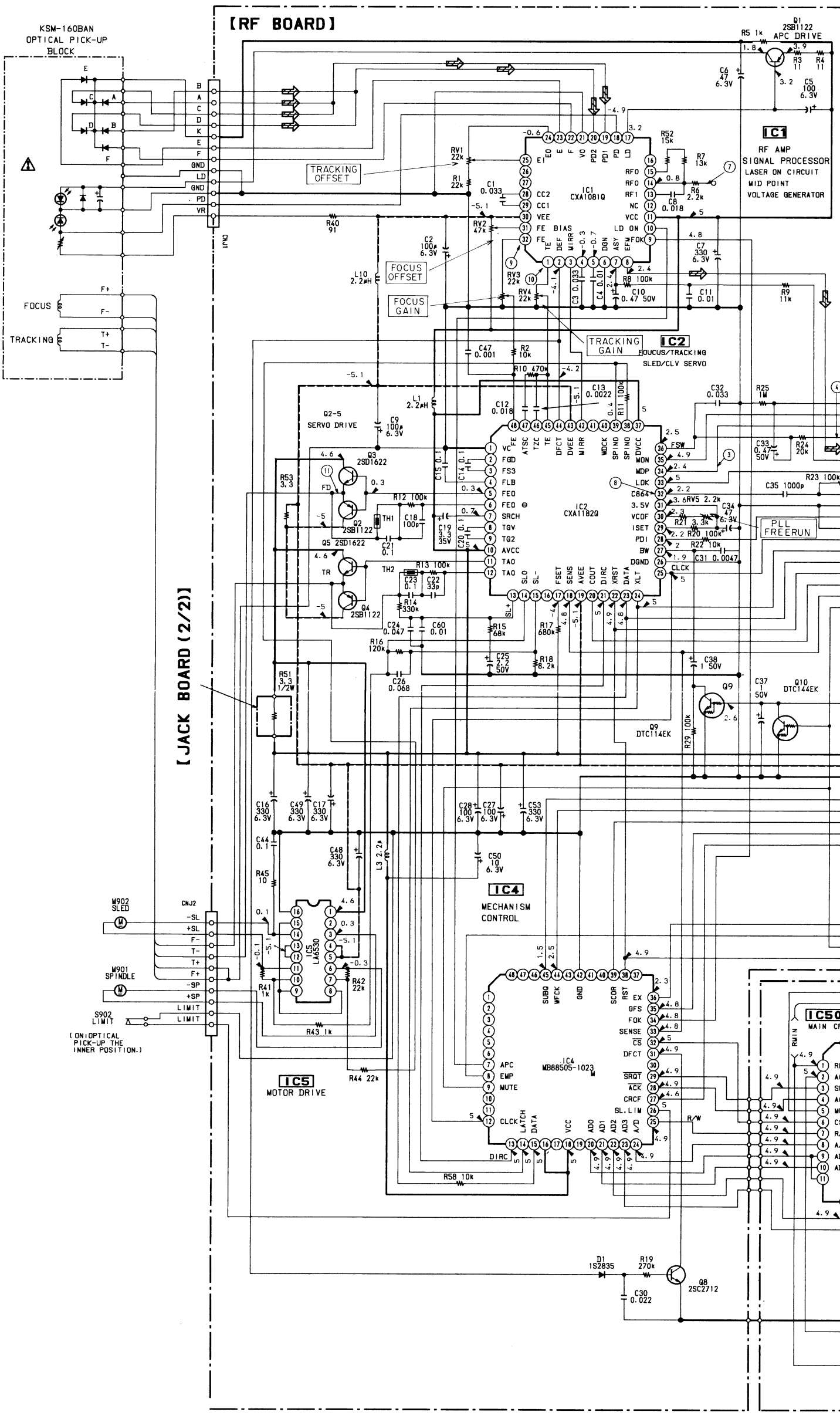
MC-Service


TO SHIELD
CNJ504
L507
D301
BLK
(CHASSIS)
CNP501
CNJ501
WHT
RED
S GND
GND
GND
BUP
RED
CLCK OUT
S BLU
MUTE
VIO
RSET
BLU
DISP
YEL
DATA OUT
GRY
CLCK IN
WHT
DATA IN
BRN
ACC SW
ORG
【EHS BOARD】
Q403
(PHOTO DET)
CNP412
CNJ412
BRN
RED
ORG
ORG
RED
BRN
CNJ405
【RELAY BOARD】
(CHASSIS)
【FLEXIBLE BOARD】
CNJ402
CNP405
R403
CNJ401
CNP404
CNP403
CNP401
D405
D404
D403
CNP402
CNP406
【FLEXIBLE BOARD】
CNJ404
BLK
RED
RED MARK
RED
BLK
M1
EJECT/
LEVER OUT
CNJ401
BLK
RED
C701
M3
ELEVATOR
UP/DOWN
BLK
RED
RED
MARK
CNJ403
GRN
GRN
【HOME SW BOARD】
SW104
HOME
CNJ402
BLU
BLU
BLU
BLU
CNJ406
WHT
WHT
GRY
VIO
VIO
【EJECT SW BOARD】
SW107
EJECT
CNP410
WHT
WHT
CNJ410
GRN
GRN
CNJ411
【EJECT BOARD】
CNP411
SW101
(EJECT)
CNJ408
VIO
VIO
SW105
LOT
CNP408
【LOT SW BOARD】
CNJ409
GRY
GRY
SW106
PST
CNP409
【PST SW BOARD】
【CBP SW BOARD】
BLU
BLU
SW102
CBP
【M1 SW BOARD】
YEL
YEL
SW103
M1
BLU
BLU
YEL
YEL
CNJ201
CNP201
【DOE BOARD】
BRN
RED
RED
BRN
D401
Q402
(DISC DET)
R401
【ELV BOARD】
M2
SAVE/LOAD
BLK
RED
RED
RED
MARK
BLK
BRN
RED
(CHASSIS)
R402
D402
Q401
(DISC DET)
GRN
RED
【DPT BOARD】

MC-Service

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ▬▬ : B+ Line
- ▬ ▬ : B− Line
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from CNJ1.
- On measuring the voltage value, connect JW1 (S GND) on RF board to the chassis ground surely.
- Voltage and waveforms are dc with respect to ground under PLAY mode conditions.
- Voltages are taken with a VOM (50 kΩ/V). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇛ : CD



e 24 for IC503 CX7991 Pin Function Description and Waveforms.

7	8	9	10	11	12	13	14	15	16	17	18

ed with regulated dc

nect JW1 (S GND) on
y.
h respect to ground

:Ω/V).
ue to normal produc-

- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ote:
he components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
eplace only with part umber specified.

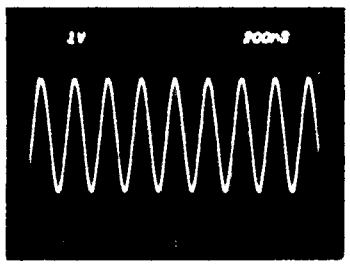
Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5-5. IC503 CX7991 PIN FUNCTION DESCRIPTION

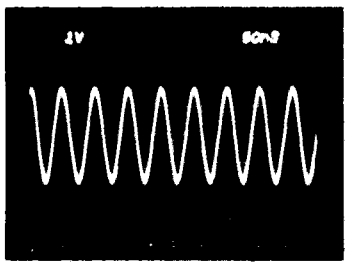
Pin No.	Description
1 – 8	Parallel output terminal. The internal register status is loaded and output using a strobe signal. When a set signal is input, "1" is output. When a reset signal is input, "0" is output.
9, 11 – 13	Parallel output terminal. The internal register status is loaded and output using a strobe signal. When a set or reset signal is input, the output becomes high impedance. The output is then enabled using a strobe signal.
10	GND
14	Serial data output terminal.
15	Set signal input terminal. Becomes active when low. When this pin is set low, the latch is set and "1" is output to pins 1 through 8 irrespective of the internal register status. Pins 9, 11, 12, and 13 then becomes high impedance.
16	Reset signal input terminal. Becomes active when low. When this pin is set low, the latch is reset and "0" is output to pins 1 through 8 irrespective of the internal register status. Pins 9, 11, 12, and 13 then becomes high impedance.
17	Strobe signal input terminal. Becomes active when high. When this pin is set high, the internal register status is shifted to the latch status.
18	Serial data input terminal. The external serial data is input.
19	Clock signal input terminal. Data is loaded when the system is initiated.
20	Power supply

5-6. WAVEFORMS

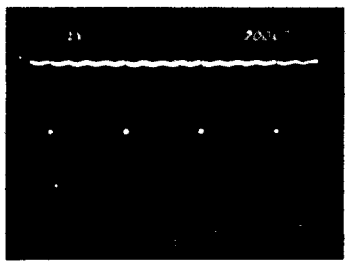
❶ IC505 pin ⑱



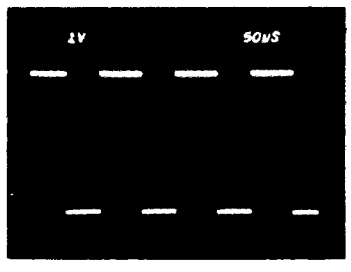
❷ IC7 pin ①



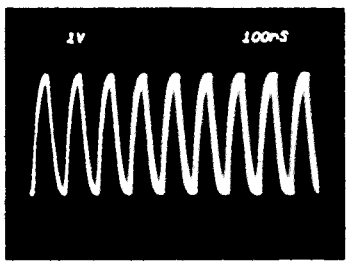
❸ IC2 pin ㉞, IC3 pin ③



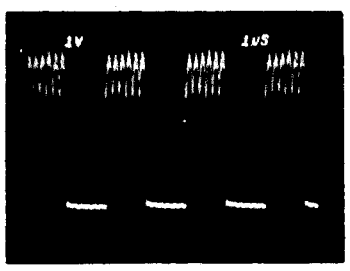
❹ IC3 pin ④



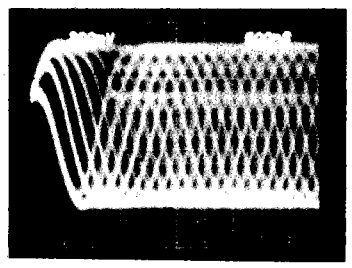
❺ IC3 pin ⑧



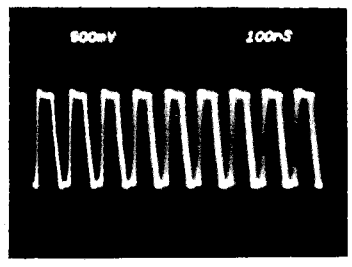
❻ IC7 pin ⑬



❼ IC1 pin ⑭

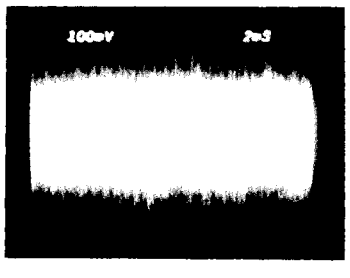


❽ IC2 pin ㉜



❾ IC1 pin ㉜

❿ IC1 pin ①



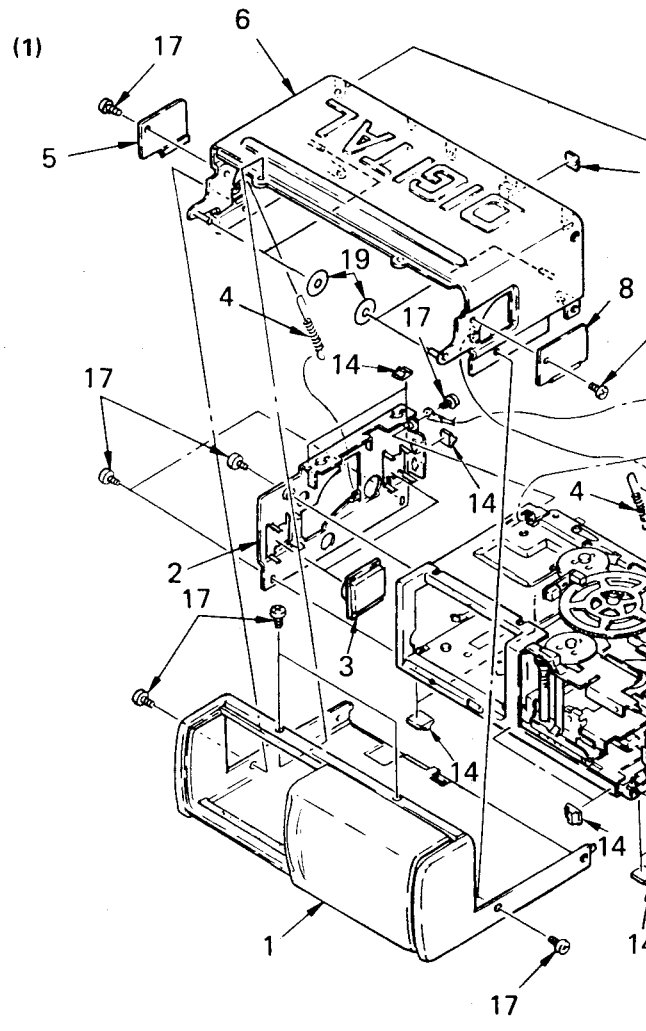
⓫ Q2, 3 emitter

MC-Service

SEC
EXPLOD

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to stan number suff ferent from components
- Color Indic Example: (RED) . . . ↑ Cabinet's C



No.	Part No.	Description	Remark
1	X-3329-590-1	PANEL ASSY, FRONT	
2	*3-348-742-01	BRACKET (O DAMPER LEFT)	
3	3-348-745-01	DAMPER (OIL)	
4	3-333-068-01	SPRING (FLOATING), TENSION	
5	*3-333-069-21	COVER (LEFT), SIDE	
6	X-3329-589-1	CASE ASSY, UPPER	
7	3-831-441-11	CUSHION	
8	*3-333-070-21	COVER (RIGHT), SIDE	
9	3-333-065-01	RETAINER, 18P CONNECTOR	
10	*3-348-753-01	(US,AEP).....LABEL, MODEL NUMBER	
	*3-348-755-01	(Canadian)...LABEL, MODEL NUMBER	
	*3-348-757-01	(WG,E).....LABEL, MODEL NUMBER	
11	*3-333-078-31	CASE, BOTTOM	
12	*3-348-726-01	PLATE (VA), SHIELD	
13	*3-333-066-01	SHEET (LARGE), INSULATING	

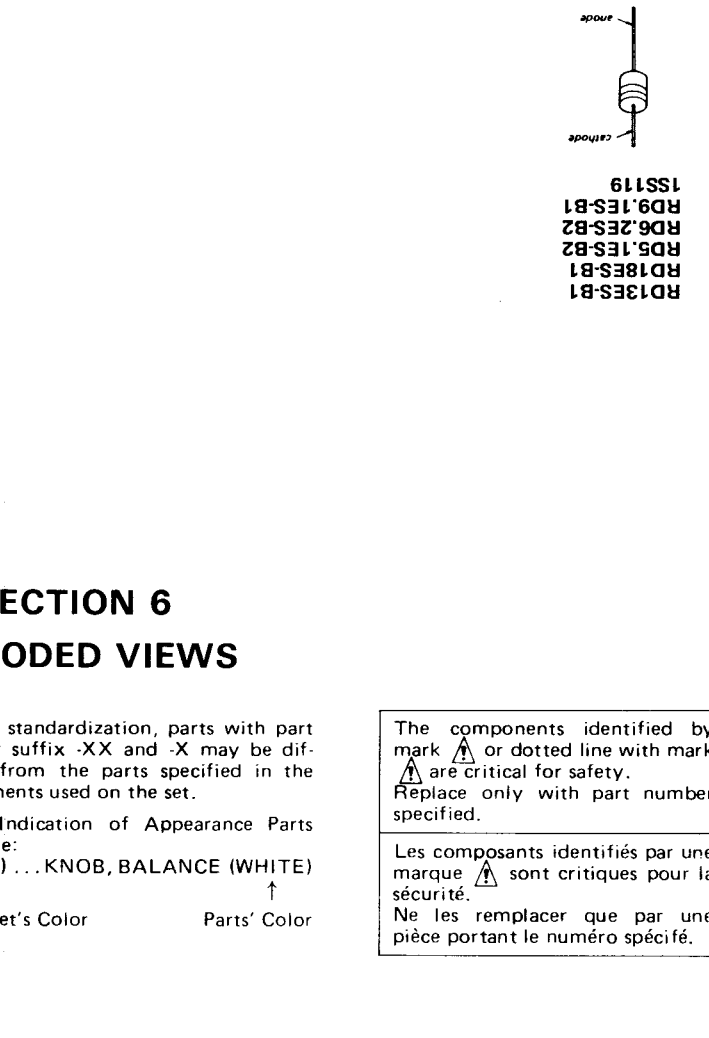
SECTION 6
EXPLODED VIEWS

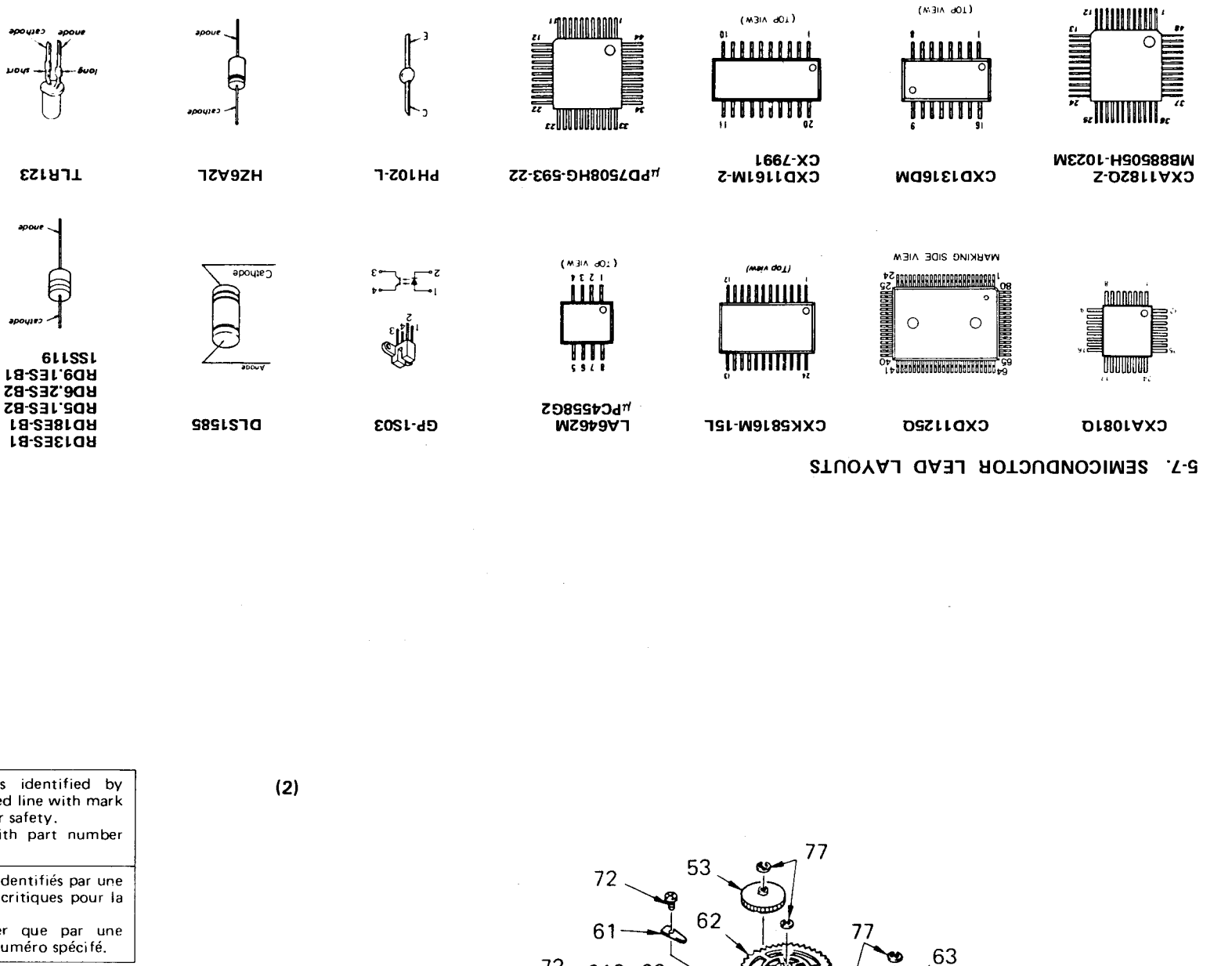
standardization, parts with part suffix -XX and -X may be different from the parts specified in the ments used on the set.

Indication of Appearance Parts e:
) . . . KNOB, BALANCE (WHITE)
↑
et's Color Parts' Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.





MC-Service

marks	No.	Part No.	Description	Remarks
	14	*3-348-750-01	CUSHION (DAMPER)	
	15	*3-333-073-01	SHEET (SMALL), INSULATING	
	16	*3-348-743-01	BRACKET (O DAMPER RIGHT)	
	17	7-682-546-09	SCREW +B 3X5	
	18	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
	19	3-348-749-01	WASHER (TEFLON)	
	20	7-621-770-87	SCREW +BVTT 2.6X5 (S)	
	21	*3-343-739-01	PLATE, PROTECTION, FLEXIBLE	
	22	*3-348-765-01	PLATE (SMALL), SHIELD	
	23	*3-348-766-01	PLATE (5A), SHIELD	
	901	*A-3265-018-A	MOUNTED PCB, JACK	
	902	*A-3265-019-A	MOUNTED PCB, RF	
	916	1-623-641-11	PC BOARD, RF FLEXIBLE	
	917	1-623-642-11	PC BOARD, TRANSLATION FLEXIBLE	
	918	1-559-439-11	CORD (WITH CONNECTOR)	

Remarks	No.	Part No.	Description
	51	3-343-724-01	ESCUTCHEON
	52	3-343-712-01	BUTTON, EJECT
	53	3-331-916-01	GEAR (MIDDLE), ELEVATOR
	54	*3-333-082-01	RETAINER, SCREW, FEED
	55	3-343-708-01	ROLLER, MAGAZINE
	56	*3-343-711-01	SHAFT, ROLLER, MAGAZINE
	57	3-343-710-01	SPRING
	58	7-624-102-04	STOP RING 1.5, TYPE -E
	59	3-343-709-01	SPRING
	60	7-621-775-00	SCREW +B 2.6X3
	61	3-331-907-01	RETAINER, SCREW, FEED
	62	3-331-952-01	GEAR (LARGE), ELEVATOR
	63	3-343-707-01	GEAR (SMALL), ELEVATOR
	64	7-682-144-01	SCREW +P 3X3
	65	4-917-404-01	GEAR, MOTOR

Remarks	No.	Part No.	Description
	66	7-621-731-08	SET-SCT, HEX. 2X2.5, FLAT POINT
	67	3-831-441-11	CUSHION
	68	*3-343-714-01	BRACKET, FOP
	70	3-333-081-01	BEARING (UPPER & LOWER)
	71	*X-3329-567-1	PLATE ASSY, TOP
	72	7-685-791-09	SCREW +BVTT 2.6X5 (S)
	73	7-621-255-25	SCREW +BVTT 2X4 (S)
	74	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT
	75	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT
	76	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3
	80	*3-343-741-01	PLATE, GROUND
	77	7-624-118-01	RING, RETAINING E-2.5
	78	3-568-749-00	CUSHION, ECM
	79	3-348-767-01	SPRING (MOTOR GROUND)
	910	*1-622-793-11	PC BOARD, EHS
	913	*1-622-796-11	PC BOARD, EJECT
	C701	1-136-165-00	CAP, METALIZED FILM 0.1MF
	M3	1-541-309-11	MOTOR, L (RF-370C)

5-7. SEMICONDUCTOR LEAD LAYOUTS

CXA1081Q

CXD1125Q

CXK5816M-15L

LA6462M
μPC4558G2

GP-1S03

DLS158S

RD13ES-B1
RD18ES-B1
RD5.1ES-B2
RD6.2ES-B2
RD9.1ES-B1
1SS119

CXA1182Q-Z
MB88505H-102SM

CXD1316DM

CXD1161M-2
CX-7991

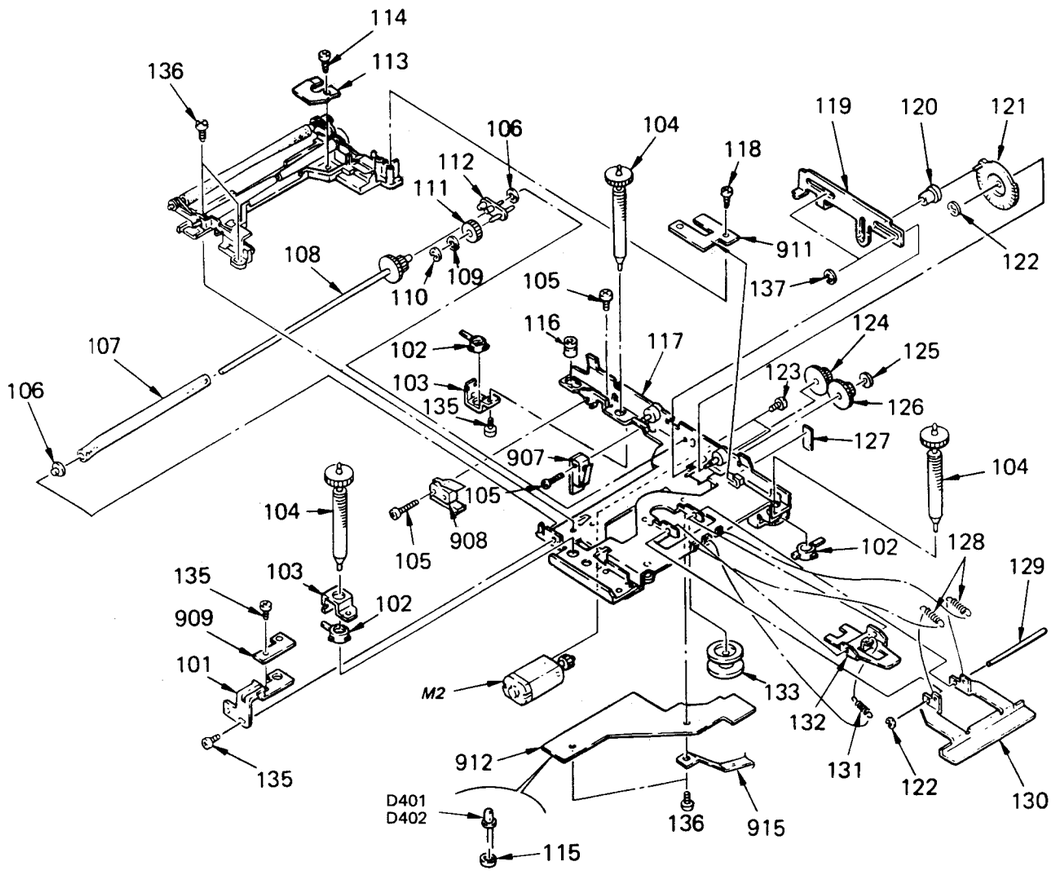
μPD7508HG-593-22

PH102-L

HZ6A2L

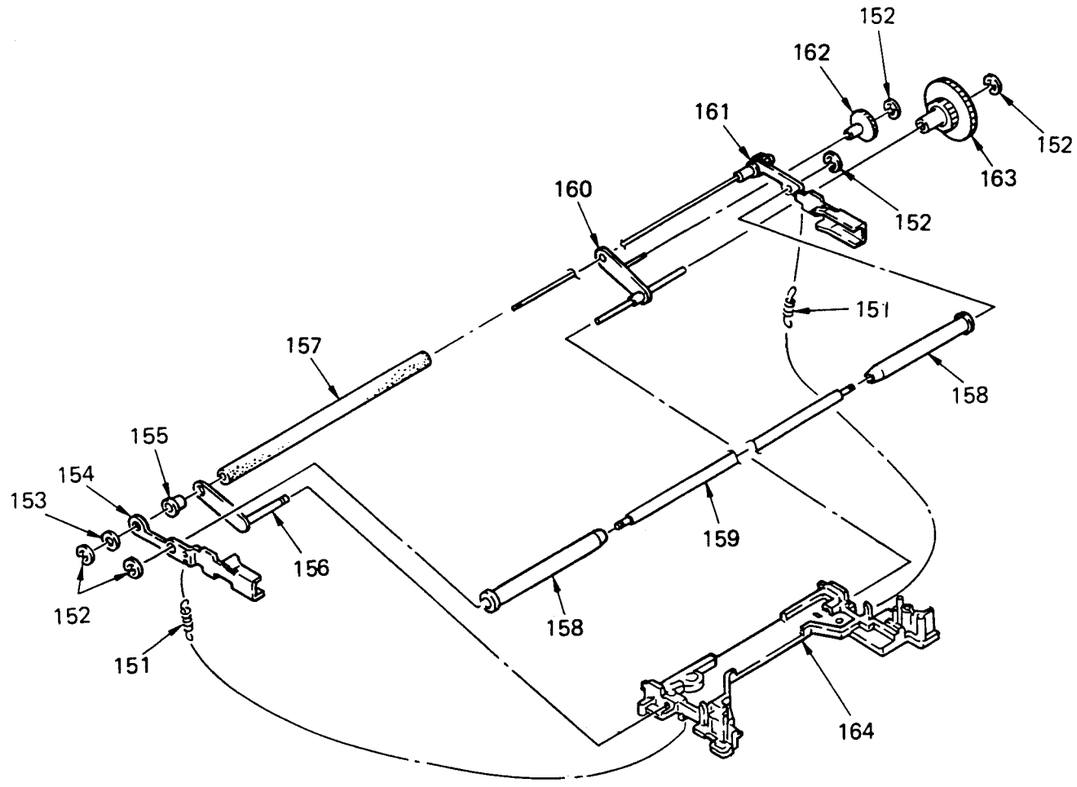
TLR123

(3)



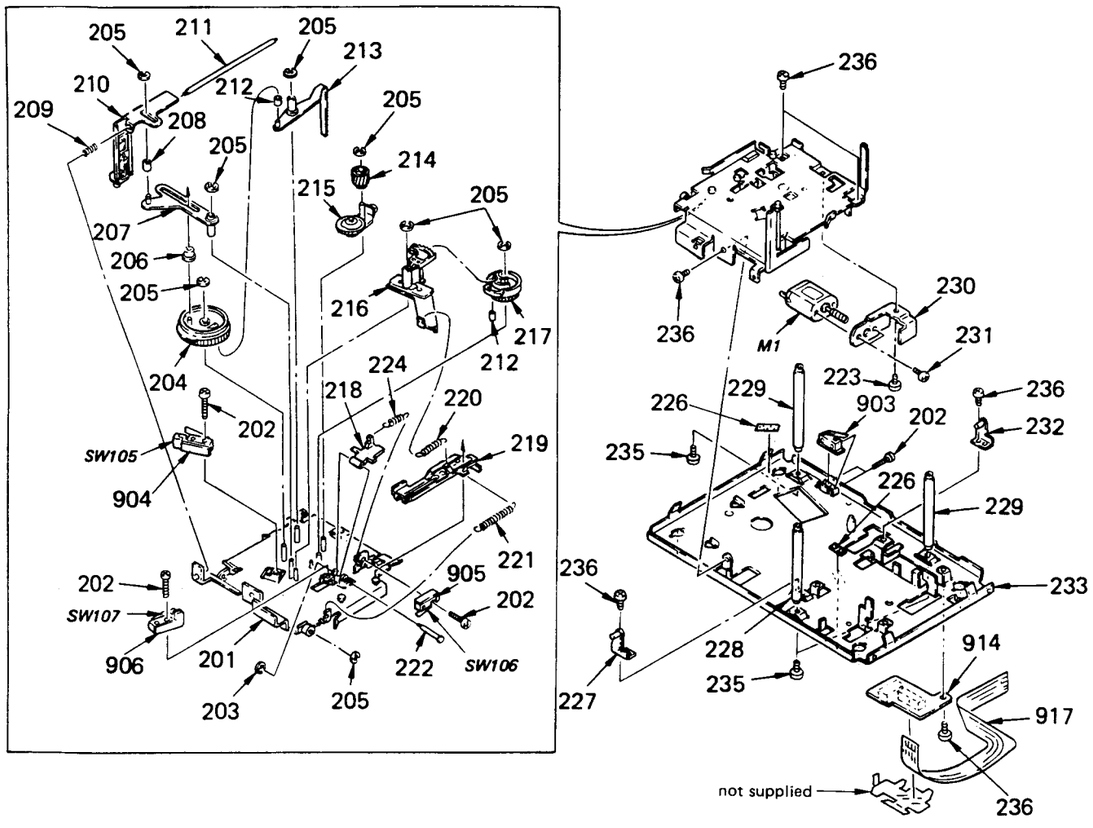
No.	Part No.	Description	Remarks
101	*3-333-092-01	BRACKET (S), PHOTO	
102	3-329-560-01	SCREW, M6	
103	*3-329-570-01	PLATE, SCREW	
104	X-3329-554-1	SCREW ASSY, FEED	
105	7-621-772-40	SCREW +B 2X8	
106	3-329-558-01	BEARING, MAIN ROLLER	
107	3-323-231-02	ROLLER (LOWER)	
108	X-3329-520-1	SHAFT (LOWER) ASSY, ROLLER	
109	3-329-553-01	SPRING, E	
110	3-321-813-11	WASHER, COTTER POLYETHYLENE	
111	3-329-555-11	GEAR (E), R	
112	*X-3329-522-1	LEVER ASSY, R	
113	*3-333-006-01	REINFORCEMENT	
114	7-621-770-67	SCREW +B 2.6X6	
115	*3-330-944-01	SPACER (LED)	
116	3-329-551-01	METAL, SHAFT	
117	*X-3329-565-1	CHASSIS ASSY, E	
118	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT	
119	*3-331-944-01	LEVER, SLIDE	
120	3-329-547-01	ROLLER, IDLE	
121	3-331-943-01	GEAR (F), R	
122	7-624-102-04	STOP RING 1.5, TYPE -E	
123	7-621-255-10	SCREW +P 2X3	
124	3-333-099-01	GEAR (A)	
125	3-895-818-01	WASHER, POLYETHYLENE, COTTER	
126	3-343-701-01	GEAR (B)	
127	3-831-441-11	CUSHION	
128	3-571-823-00	SPRING, TENSION	
129	3-333-098-01	SHAFT, DISK CHUCK	
130	*X-3329-566-1	STOPPER ASSY, CD	
131	3-535-369-XX	SPRING, TENSION	
132	3-343-718-01	BRACKET, DISK CHUCK	
133	3-343-717-01	PLATE (M), CHUCK	
135	7-621-255-25	SCREW +BVTT 2X4 (S)	
136	7-685-791-09	SCREW +BVTT 2.6X5 (S)	
137	7-624-104-04	STOP RING 2.0, TYPE -E	
907	*1-622-790-11	PC BOARD, MI	
908	*1-622-791-11	PC BOARD, CB	
909	*1-622-792-11	PC BOARD, DPT	
911	*1-622-794-11	PC BOARD, DOE	
912	*1-622-795-11	PC BOARD, LED	
915	1-623-640-11	PC BOARD, MD FLEXIBLE	
M2	X-3329-560-1	MOTOR ASSY, M2	

(4)



No.	Part No.	Description	Remarks
151	3-547-665-11	SPRING, TENSION	
152	7-624-102-04	STOP RING 1.5, TYPE -E	
153	3-310-958-00	WASHER (R)	
154	3-343-706-01	LINK, DISK	
155	*3-331-925-01	BEARING, ROLLER STOPPER	
156	*X-3329-517-1	LEVER (F) ASSY, LINK	
157	3-323-231-02	ROLLER (LOWER)	
158	X-3329-518-1	ROLLER (UPPER) ASSY	
159	*3-329-552-01	SHAFT, SIDE ROLLER	
160	*X-3329-516-1	LEVER (B) ASSY, LINK	
161	X-3329-561-1	SHAFT (UPPER) ASSY, ROLLER	
162	3-331-924-01	GEAR (G), ROLLER	
163	3-331-914-01	GEAR, ROLLER 3 STEP	
164	3-331-957-06	GUIDE, DISK	

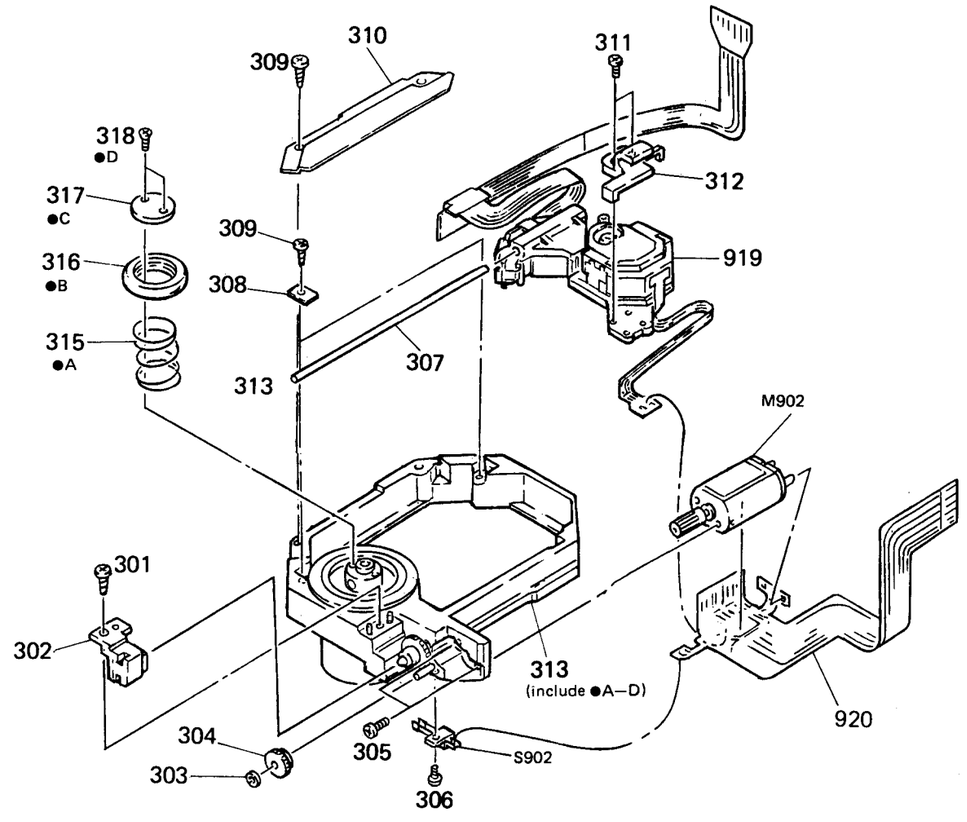
(5)



No.	Part No.	Description	Remarks
201	*X-3329-563-1	CHASSIS ASSY, PACK	
202	7-685-855-01	+BVTT 2X10 (S)	
203	7-624-102-04	STOP RING 1.5, TYPE -E	
204	X-3329-513-1	GEAR ASSY, CAM	
205	7-624-104-04	STOP RING 2.0, TYPE -E	
206	3-331-905-01	ROLLER (A)	
207	*X-3329-507-1	LEVER ASSY, LINEAR	
208	3-331-927-01	ROLLER, LINEAR LEVER	
209	3-568-315-01	SPRING, COMPRESSION	
210	X-3329-558-1	SLIDER ASSY, LINEAR	
211	3-331-904-01	SHAFT, LINEAR SLIDER	
212	3-329-580-01	ROLLER, CAM	
213	*X-3329-510-1	LEVER ASSY, SLIDER SET	
214	3-333-088-01	WHEEL, WORM	
215	X-3329-557-1	GEAR ASSY	
216	X-3329-511-1	LEVER ASSY, SOFT EJECT	
217	3-331-951-01	GEAR (2), EJECT CAM	
218	3-333-087-01	HOOK, BACK LOCK	
219	*3-331-913-01	EJECTOR (2), SOFT	
220	3-343-723-01	SPRING, TENSION	
221	3-634-191-XX	SPRING, TENSION	
222	*3-329-573-01	SHAFT, LOCK HOOK	

No.	Part No.	Description	Remarks
223	7-628-253-90	SCREW +PS 2.6X4	
224	3-535-369-XX	SPRING, TENSION	
226	3-831-441-11	CUSHION	
227	*X-3329-555-1	OPENER ASSY (A)	
228	*3-333-084-01	SHAFT (B), FIXED, E	
229	*3-333-083-01	SHAFT (A), FIXED, E	
230	*3-343-715-01	PLATE, FIXED, MOTOR	
231	7-621-775-00	SCREW +P 2.6X3	
232	*X-3329-556-1	OPENER ASSY (B)	
233	*X-3329-568-1	CHASSIS ASSY, BOTTOM	
235	7-682-546-09	SCREW +B 3X5	
236	7-685-791-09	SCREW +BVTT 2.6X5 (S)	
903	*1-617-987-12	PC BOARD, COMMON	
904	*1-622-787-11	PC BOARD, LOT	
905	*1-622-788-11	PC BOARD, PS	
906	*1-622-789-11	PC BOARD, EJ	
914	*1-622-797-11	PC BOARD, TRANSLATION	
915	1-623-640-11	PC BOARD, MD FLEXIBLE	
SW105	1-570-504-11	SWITCH, MICRO (LOT)	
SW106	1-570-504-11	SWITCH, MICRO (PST)	
SW107	1-570-504-11	SWITCH, MICRO (EJECT)	
M1	X-3329-571-2	MOTOR ASSY	

(6) OPTICAL PICK-UP BLOCK (KSM-160BAN)



No.	Part No.	Description	Remarks
301	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
302	X-2640-611-1	RETAINER ASSY, THRUST	
303	3-321-813-01	WASHER, COTTER POLYETHYLENE	
304	2-640-625-02	GEAR (B)	
305	7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3	
306	2-640-620-03	SCREW (B) (1.4X3), TAPPING	
307	2-640-632-01	SHAFT, GUIDE	
308	2-640-645-01	RETAINER, GUIDE SHAFT	
309	7-685-102-19	SCREW +P 2X4 TYPE2 NON-SLIT	
310	2-640-623-01	COVER, MD	

No.	Part No.	Description	Remarks
311	7-627-852-17	+P 1.7X4	
312	2-640-654-03	GUIDE (D), FEED	
313	A-4910-196-A	SCREW BLOCK ASSY, SLED MD	
315	2-640-617-02	SPRING, COMPRESSION	
316	2-640-650-02	STOPPER, RING	
317	2-643-418-01	RING, CENTER	
318	7-627-451-17	SCREW, PRECISION +K 1.4X2.5	
919	⚠8-848-067-01	PICKUP, OPTICS KSS-160B	
920	1-630-551-11	PC BOARD, ML2 FLEXIBLE	
M902	A-4910-100-B	GEAR ASSY, SLED MOTOR	
S902	1-554-938-11	SWITCH, LEAF	

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MC-Service

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
901	*A-3265-018-A	MOUNTED PCB, JACK			
902	*A-3265-019-A	MOUNTED PCB, RF			
903	*1-617-987-12	PC BOARD, COMMON			
904	*1-622-787-11	PC BOARD, LOT			
905	*1-622-788-11	PC BOARD, PS			
906	*1-622-789-11	PC BOARD, EJ			
907	*1-622-790-11	PC BOARD, MI			
908	*1-622-791-11	PC BOARD, CB			
909	*1-622-792-11	PC BOARD, DPT			
910	*1-622-793-11	PC BOARD, EHS			
911	*1-622-794-11	PC BOARD, DOE			
912	*1-622-795-11	PC BOARD, LED			
913	*1-622-796-11	PC BOARD, EJECT			
914	*1-622-797-11	PC BOARD, TRANSLATION			
915	1-623-640-11	PC BOARD, MD FLEXIBLE			
916	1-623-641-11	PC BOARD, RF FLEXIBLE			
917	1-623-642-11	PC BOARD, TRANSLATION FLEXIBLE			
918	1-559-439-11	CORD (WITH CONNECTOR)			
919	⚠8-848-067-01	PICKUP, OPTICS KSS-160B			
920	1-630-551-11	PC BOARD, ML2 FLEXIBLE			
C1	1-163-078-11	CERAMIC CHIP	0.033MF	10%	25V
C2	1-126-177-11	ELECT	100MF	20%	6.3V
C3	1-163-078-11	CERAMIC CHIP	0.033MF	10%	25V
C4	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C5	1-126-177-11	ELECT	100MF	20%	6.3V
C6	1-126-154-11	ELECT	47MF	20%	6.3V
C7	1-124-442-00	ELECT	330MF	20%	6.3V
C8	1-163-062-00	CERAMIC CHIP	0.018MF	10%	50V
C9	1-126-177-11	ELECT	100MF	20%	6.3V
C10	1-124-465-00	ELECT	0.47MF	20%	50V
C11	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C12	1-163-062-00	CERAMIC CHIP	0.018MF	10%	50V
C13	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C14	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C15	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C16	1-124-442-00	ELECT	330MF	20%	6.3V
C17	1-124-442-00	ELECT	330MF	20%	6.3V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C19	1-126-162-11	ELECT	3.3MF	20%	35V
C20	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C21	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C22	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C23	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C24	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C25	1-124-257-00	ELECT	2.2MF	20%	50V
C26	1-163-076-00	CERAMIC CHIP	0.068MF		50V
C27	1-126-177-11	ELECT	100MF	20%	6.3V
C28	1-126-177-11	ELECT	100MF	20%	6.3V
C29	1-127-489-00	ELECT(SOLID)	10MF	20%	6.3V
C30	1-163-037-00	CERAMIC CHIP	0.022MF	10%	50V
C31	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C32	1-163-078-11	CERAMIC CHIP	0.033MF	10%	25V
C33	1-124-465-00	ELECT	0.47MF	20%	50V
C34	1-126-154-11	ELECT	47MF	20%	6.3V
C35	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C37	1-126-160-11	ELECT	1MF	20%	50V
C38	1-126-160-11	ELECT	1MF	20%	50V
C39	1-127-489-00	ELECT(SOLID)	10MF	20%	6.3V
C40	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C41	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C44	1-164-159-00	CERAMIC	0.1MF		
C47	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C48	1-124-442-00	ELECT	330MF	20%	6.3V
C49	1-124-442-00	ELECT	330MF	20%	6.3V
C50	1-127-489-00	ELECT(SOLID)	10MF	20%	6.3V
C51	1-124-987-11	ELECT	3300MF	20%	6.3V
C52	1-124-987-11	ELECT	3300MF	20%	6.3V
C53	1-124-442-00	ELECT	330MF	20%	6.3V
C55	1-163-097-00	CERAMIC CHIP	15PF	5%	50V
C56	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C58	1-126-160-11	ELECT	1MF	20%	50V
C59	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C60	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C101	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C102	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C103	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C104	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C105	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C106	1-124-968-11	ELECT	22MF	20%	6.3V
C107	1-163-191-00	CERAMIC CHIP	270PF	5%	50V
C201	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C202	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C203	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C204	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C205	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C206	1-124-968-11	ELECT	22MF	20%	6.3V
C207	1-163-191-00	CERAMIC CHIP	270PF	5%	50V
C301	1-124-442-00	ELECT	330MF	20%	6.3V
C302	1-123-612-00	ELECT	2.2MF	20%	50V
C303	1-123-612-00	ELECT	2.2MF	20%	50V
C304	1-123-612-00	ELECT	2.2MF	20%	50V
C305	1-123-612-00	ELECT	2.2MF	20%	50V
C306	1-101-005-00	CERAMIC	0.022MF		25V

Ref.No.	Part No.	Description			
C501	1-136-165-00	FILM	0.1MF	5%	50V
C502	1-136-165-00	FILM	0.1MF	5%	50V
C503	1-124-455-00	ELECT	100MF	20%	16V
C505	1-163-055-00	CERAMIC CHIP	0.0047MF	10%	50V
C506	1-126-157-11	ELECT	10MF	20%	6.3V
C507	1-124-225-00	ELECT	100MF	20%	6.3V
C508	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C511	1-126-160-11	ELECT	1MF	20%	50V
C512	1-124-465-00	ELECT	0.47MF	20%	50V
C513	1-136-165-00	FILM	0.1MF	5%	50V
C542	1-124-455-00	ELECT	100MF	20%	16V
C543	1-136-165-00	FILM	0.1MF	5%	50V
C546	1-127-489-00	ELECT(SOLID)	10MF	20%	6.3V
C547	1-125-486-11	CAP,DOUBLE LAYERS	0.22F		5.5V
C548	1-136-165-00	FILM	0.1MF	5%	50V
C549	1-124-229-00	ELECT	33MF	20%	6.3V
C551	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C552	1-136-165-00	FILM	0.1MF	5%	50V
C701	1-136-165-00	CAP, METALIZED FILM	0.1MF		
C703	1-126-160-11	ELECT	1MF	20%	50V
C705	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
C706	1-126-247-11	ELECT	560MF	20%	6.3V
C707	1-126-247-11	ELECT	560MF	20%	6.3V
C710	1-124-119-00	ELECT	330MF	20%	16V
C718	1-126-157-11	ELECT	10MF	20%	6.3V
C719	1-124-229-00	ELECT	33MF	20%	6.3V
C720	1-124-755-00	ELECT	3300MF	20%	16V
C721	1-163-063-00	CERAMIC CHIP	0.022MF	10%	50V
CN301	1-506-914-11	PIN, CONNECTOR 2P			
CNJ1	*1-566-776-11	SOCKET, CONNECTOR 12P			
CNJ2	*1-568-509-11	HOUSING, CONNECTOR 11P			
CNJ4	*1-566-887-11	SOCKET, CONNECTOR 18P			
CNJ401	*1-566-887-11	SOCKET, CONNECTOR 18P			
CNJ402	*1-566-888-11	SOCKET, CONNECTOR 10P			
CNJ501	1-566-907-11	PIN, CONNECTOR 18P			
CNJ502	*1-566-887-11	SOCKET, CONNECTOR 18P			
CNJ503	*1-566-887-11	SOCKET, CONNECTOR 18P			
CNJ504	*1-563-912-11	SOCKET, CONNECTOR 4P			
CNP201	*1-566-001-11	PIN, CONNECTOR (PC BOARD) 4P			
CNP401	*1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P			
CNP402	*1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P			
CNP403	*1-506-984-31	PIN, CONNECTOR (PC BOARD) 2P			
CNP404	*1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P			
CNP405	*1-506-985-11	PIN, CONNECTOR (PC BOARD) 3P			
CNP406	*1-506-988-11	PIN, CONNECTOR (PC BOARD) 6P			
CNP408	*1-564-012-11	PIN, CONNECTOR 2P			
CNP409	1-506-467-11	PIN, CONNECTOR 2P			
CNP410	1-506-467-11	PIN, CONNECTOR 2P			
CNP411	*1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
CNP412	*1-506-999-11	PIN, CONNECTOR (PC BOARD) 3P			
D1	8-719-100-03	DIODE 1S2835			
D301	8-719-100-03	DIODE 1S2835			
D302	8-719-100-05	DIODE 1S2837			
D303	8-719-911-19	DIODE 1SS119			
D401	8-719-812-31	DIODE TLR123			
D402	8-719-812-31	DIODE TLR123			

Ref.No.	Part No.	Description			
D403	8-719-100-03	DIODE 1S2835			
D404	8-719-100-03	DIODE 1S2835			
D405	8-719-100-03	DIODE 1S2835			
D501	8-719-110-12	DIODE RD9.1ES-B1			
D502	8-719-109-93	DIODE RD6.2ES-B2			
D503	8-719-100-03	DIODE 1S2835			
D505	8-719-100-03	DIODE 1S2835			
D507	8-719-109-85	DIODE RD5.1ES-B2			
D508	8-719-911-19	DIODE 1SS119			
D509	8-719-110-35	DIODE RD13ES-B1			
D511	8-719-109-85	DIODE RD5.1ES-B2			
D512	8-719-109-85	DIODE RD5.1ES-B2			
D513	8-719-109-85	DIODE RD5.1ES-B2			
D514	8-719-109-85	DIODE RD5.1ES-B2			
D515	8-719-109-86	DIODE RD5.1ES-B2			
D516	8-719-109-85	DIODE RD5.1ES-B2			
D518	8-719-911-19	DIODE 1SS119			
D703	8-719-801-67	DIODE DLS1585			
D704	8-719-910-62	DIODE HZ6A2L			
D705	8-719-109-93	DIODE RD6.2ES-B2			
D706	8-719-109-85	DIODE RD5.1ES-B2			
D707	8-719-110-48	DIODE RD18ES-B1			
D708	8-719-801-67	DIODE DLS1585			
D709	8-719-109-85	DIODE RD5.1ES-B2			
D710	8-719-801-67	DIODE DLS1585			
DD1	1-464-848-11	CONVERTER UNIT, DC-DC			
IC1	8-752-033-14	IC CXA1081Q			
IC2	8-752-032-32	IC CXA1182Q-Z			
IC3	8-752-328-62	IC CXD1125Q			
IC4	8-759-981-37	IC MB88505H-1023M			
IC5	8-759-821-58	IC LA-6530			
IC6	8-752-323-65	IC CXK5816M-15L			
IC7	8-759-946-27	IC CXD1316DM			
IC301	8-759-805-33	IC CXD1161M-2			
IC302	8-759-100-96	IC UPC4558G2			
IC303	8-759-802-48	IC LA6462M			
IC501	8-759-802-32	IC LB1649			
IC502	8-759-940-45	IC S-8054HN-CB-S			
IC503	8-757-991-00	IC CX-7991			
IC505	8-759-112-05	IC UPD7508HG-593-22			
IC507	8-759-802-32	IC LB1649			
JR1	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR2	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR51	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR550	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR551	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR552	1-216-296-00	METAL GLAZE	0	5%	1/8W
L1	1-410-501-11	INDUCTOR	2.2UH		
L3	1-410-501-11	INDUCTOR	2.2UH		
L4	1-410-316-11	INDUCTOR	1UH		
L7	1-410-196-11	INDUCTOR CHIP	2.2UH		
L8	1-410-196-11	INDUCTOR CHIP	2.2UH		
L10	1-410-501-11	INDUCTOR	2.2UH		
L11	1-410-196-11	INDUCTOR CHIP	2.2UH		
L101	1-410-196-11	INDUCTOR CHIP	2.2UH		
L201	1-410-196-11	INDUCTOR CHIP	2.2UH		

Ref.No.	Part No.	Description
L301	1-410-196-11	INDUCTOR CHIP 2.2UH
L501	1-410-501-11	INDUCTOR 2.2UH
L504	1-410-501-11	INDUCTOR 2.2UH
L505	1-410-501-11	INDUCTOR 2.2UH
L506	1-410-501-11	INDUCTOR 2.2UH
L507	1-410-501-11	INDUCTOR 2.2UH
M1	X-3329-571-1	M1 MOTOR ASSY
M2	X-3329-560-1	MOTOR ASSY, M2
M3	1-541-309-11	MOTOR, L (RF-370C)
M902	A-4910-100-B	GEAR ASSY, SLED MOTOR
Q1	8-729-804-42	TRANSISTOR 2SB1122-T
Q2	8-729-106-60	TRANSISTOR 2SB1115A
Q3	8-729-808-02	TRANSISTOR 2SD1622-R-TC
Q4	8-729-106-60	TRANSISTOR 2SB1115A
Q5	8-729-808-02	TRANSISTOR 2SD1622
Q6	8-729-901-00	TRANSISTOR DTC124EK
Q8	8-729-271-22	TRANSISTOR 2SC2712G
Q9	8-729-900-53	TRANSISTOR DTC114EK
Q10	8-729-901-01	TRANSISTOR DTC144EK
Q101	8-729-202-38	TRANSISTOR 2SC3326N
Q201	8-729-202-38	TRANSISTOR 2SC3326N
Q301	8-729-901-05	TRANSISTOR DTA124EK
Q302	8-729-901-00	TRANSISTOR DTC124EK
Q303	8-729-805-67	TRANSISTOR 2SA1342
Q304	8-729-901-00	TRANSISTOR DTC124EK
Q305	8-729-901-00	TRANSISTOR DTC124EK
Q401	8-729-110-21	TRANSISTOR PH102-L
Q402	8-729-110-21	TRANSISTOR PH102-L
Q403	8-719-906-43	DIODE GP-1S03
Q502	8-729-216-22	TRANSISTOR 2SA1162
Q505	8-729-216-22	TRANSISTOR 2SA1162
Q506	8-729-216-21	TRANSISTOR 2SA1162Y
Q511	8-729-805-67	TRANSISTOR 2SA1342
Q512	8-729-901-00	TRANSISTOR DTC124EK
Q513	8-729-805-67	TRANSISTOR 2SA1342
Q514	8-729-271-23	TRANSISTOR 2SC2712Y
Q515	8-729-805-67	TRANSISTOR 2SA1342
Q516	8-729-271-23	TRANSISTOR 2SC2712Y
Q517	8-729-805-67	TRANSISTOR 2SA1342
Q518	8-729-901-00	TRANSISTOR DTC124EK
Q519	8-729-901-00	TRANSISTOR DTC124EK
Q520	8-729-805-67	TRANSISTOR 2SA1342
Q523	8-729-271-22	TRANSISTOR 2SC2712G
Q524	8-729-805-67	TRANSISTOR 2SA1342
Q704	8-729-901-00	TRANSISTOR DTC124EK
Q705	8-729-804-42	TRANSISTOR 2SB1122-T
Q706	8-729-271-22	TRANSISTOR 2SC2712G
Q707	8-729-808-02	TRANSISTOR 2SD1622
Q710	8-729-900-53	TRANSISTOR DTC114EK
R1	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R2	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R3	1-216-151-00	METAL GLAZE 11 5% 1/8W
R4	1-216-151-00	METAL GLAZE 11 5% 1/8W
R5	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R6	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W
R7	1-216-076-00	METAL GLAZE 13K 5% 1/10W
R8	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R9	1-216-074-00	METAL GLAZE 11K 5% 1/10W

Ref.No.	Part No.	Description
R10	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R11	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R12	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R13	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R14	1-216-109-00	METAL GLAZE 330K 5% 1/10W
R15	1-216-093-00	METAL GLAZE 68K 5% 1/10W
R16	1-216-099-00	METAL GLAZE 120K 5% 1/10W
R17	1-216-266-00	METAL GLAZE 680K 5% 1/10W
R18	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W
R19	1-216-107-00	METAL GLAZE 270K 5% 1/10W
R20	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R21	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R22	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R23	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R24	1-216-080-00	METAL GLAZE 20K 5% 1/10W
R25	1-216-121-00	METAL GLAZE 1M 5% 1/10W
R27	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R28	1-216-222-00	METAL GLAZE 10K 5% 1/8W
R29	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R40	1-216-024-00	METAL GLAZE 91 5% 1/10W
R41	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R42	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R43	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R44	1-216-230-00	METAL GLAZE 22K 5% 1/8W
R45	1-247-783-00	CARBON 10 5% 1/4W
R50	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R51	1-214-804-11	METAL 3.3 1% 1/2W
R52	1-216-077-00	METAL GLAZE 15K 5% 1/10W
R53	1-216-138-00	METAL GLAZE 3.3 5% 1/8W
R55	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R56	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R58	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R100	1-216-675-11	METAL CHIP 10K 0.50% 1/10W
R101	1-216-288-11	METAL GLAZE 5.6M 5% 1/8W
R102	1-216-680-11	METAL CHIP 16K 0.50% 1/10W
R103	1-216-683-11	METAL CHIP 22K 0.50% 1/10W
R104	1-216-691-11	METAL CHIP 47K 0.50% 1/10W
R105	1-216-679-11	METAL CHIP 15K 0.50% 1/10W
R106	1-216-651-11	METAL CHIP 1K 0.50% 1/10W
R107	1-216-001-00	METAL GLAZE 10 5% 1/10W
R108	1-216-633-11	METAL CHIP 180 0.50% 1/10W
R109	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R110	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
R112	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R200	1-216-675-11	METAL CHIP 10K 0.50% 1/10W
R201	1-216-288-11	METAL GLAZE 5.6M 5% 1/8W
R202	1-216-680-11	METAL CHIP 16K 0.50% 1/10W
R203	1-216-683-11	METAL CHIP 22K 0.50% 1/10W
R204	1-216-691-11	METAL CHIP 47K 0.50% 1/10W
R205	1-216-679-11	METAL CHIP 15K 0.50% 1/10W
R206	1-216-651-11	METAL CHIP 1K 0.50% 1/10W
R207	1-216-150-00	METAL GLAZE 10 5% 1/8W
R208	1-216-633-11	METAL CHIP 180 0.50% 1/10W
R209	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R210	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
R212	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R301	1-216-039-00	METAL GLAZE 390 5% 1/10W
R304	1-216-097-00	METAL GLAZE 100K 5% 1/10W

Ref.No.	Part No.	Description			
R305	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R307	1-216-150-00	METAL GLAZE	10	5%	1/8W
R308	1-216-150-00	METAL GLAZE	10	5%	1/8W
R401	1-216-182-00	METAL GLAZE	220	5%	1/8W
R402	1-216-182-00	METAL GLAZE	220	5%	1/8W
R403	1-216-182-00	METAL GLAZE	220	5%	1/8W
R502	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R503	1-249-429-11	CARBON	10K	5%	1/4W
R505	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R506	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W
R507	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R508	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R516	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R518	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R519	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R520	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R521	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R530	1-216-182-00	METAL GLAZE	220	5%	1/8W
R531	1-249-417-11	CARBON	1K	5%	1/4W
R532	1-247-903-00	CARBON	1M	5%	1/4W
R533	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R534	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R535	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R536	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R537	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R540	1-216-238-00	METAL GLAZE	47K	5%	1/8W
R541	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R542	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R543	1-249-417-11	CARBON	1K	5%	1/4W
R544	1-216-025-00	METAL GLAZE	100	5%	1/10W
R545	1-216-025-00	METAL GLAZE	100	5%	1/10W
R704	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R705	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R706	1-216-238-00	METAL GLAZE	47K	5%	1/8W
R707	1-216-190-00	METAL GLAZE	470	5%	1/8W
R708	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R709	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R710	1-216-238-00	METAL GLAZE	47K	5%	1/8W
R711	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R713	1-214-792-00	METAL	1	1%	1/2W
RV1	1-228-995-00	RES, ADJ, CARBON 22K			
RV2	1-228-996-00	RES, ADJ, CARBON 47K			
RV3	1-228-995-00	RES, ADJ, CARBON 22K			
RV4	1-228-995-00	RES, ADJ, CARBON 22K			
RV5	1-228-991-00	RES, ADJ, CARBON 2.2K			

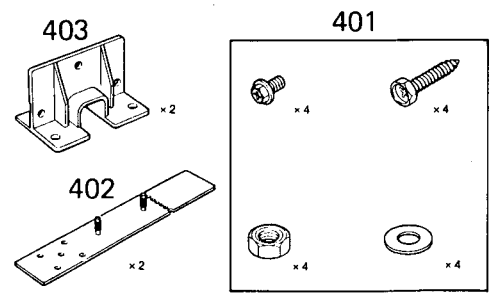
Ref.No.	Part No.	Description
RY300	1-515-614-11	RELAY
S902	1-554-938-11	SWITCH, LEAF
SW101	1-554-813-41	SWITCH, KEY BOARD
SW102	1-570-503-11	SWITCH, MICRO (CBP)
SW103	1-570-502-11	SWITCH, MICRO (MI)
SW104	1-570-504-11	SWITCH, MICRO (HOME)
SW105	1-570-504-11	SWITCH, MICRO (LOT)
SW106	1-570-504-11	SWITCH, MICRO (PST)
SW107	1-570-504-11	SWITCH, MICRO (EJECT)
TH1	1-807-776-11	THERMISTOR ERT-D2FHJ802T
TH2	1-807-776-11	THERMISTOR ERT-D2FHJ802T
THP501	1-807-368-11	THERMISTOR PTH59F04BG222TS
X2	1-567-820-11	VIBRATOR, CRYSTAL 16MHz
X501	1-567-775-11	VIBRATOR, CERAMIC 4.19MHz

ACCESSORY & PACKING MATERIAL

1-559-438-14	(AEP).....CORD (WITH CONNECTOR)
1-559-438-71	(US,Canadia)...CORD (WITH CONNECTOR)
3-343-733-01	CUSHION (LOWER)
3-343-734-01	CUSHION (UPPER)
3-343-750-11	(US,AEP)...BRACKET
*3-348-761-01	INDIVIDUAL CARTON
3-750-116-11	(US,Canadian,AEP)...MANUAL, INSTRUCTION
3-750-116-41	(AEP,WG,E).....MANUAL, INSTRUCTION
7-688-005-01	W 5, SMALL
7-684-025-04	N 5, TYPE 2
A-3209-209-A	PRINTS ASSY
A-4675-162-B	MAGAZINE ASSY
X-2114-001-1	HOLDER ASSY, CD BOOKLET

MOUNTING HARDWARE

No.	Part No.	Description
401	X-3329-570-1	SCREW ASSY
402	X-3329-574-1	BRACKET ASSY
403	3-333-076-11	BRACKET, MAIN



MC-Service

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